PB84-171636

Final Environmental Impact Statement for Proposed Arizona Hazardous Waste Management Facility

(U.S.) Environmental Protection Agency
San Francisco, CA

Prepared for

Arizona State Dept. of Health Services, Phoenix

Jul 83

U.S. Department of Commerce
National Technical Information Service
NTIS

United States
Environmental Protection
Agency

Region 9
215 Fremont Street
San Francisco, CA 94105

EPA 909/9-83-002
July, 1983

PB84-171636

EPA

Environmental Impact Statement

Final

Arizona Hazardous Waste Facility

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The State of Arizona has asked to purchase a one-square mile parcel of land from the U.S. Bureau of Land Management for siting a state-owned contractor-operated hazardous waste facility. At BLM's request, EPA agreed to serve as lead agency in preparing the EIS on the proposed land transfer.

This Eis addresses concerns related to selection of a facility site. Impacts related specifically to the design and operation of the facility itself would be addressed through future permits issued by EPA and the Arizona Department of Health Services.

The final EIS addresses comments on the Draft EIS by presenting additional discussion of several major environmental issues. It also assesses the impacts of a representative "high technology" facility, which uses a high temperature incinerator to dispose of PCB wastes and other incincerable hazardous wastes.

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July 1983

FINAL

ENVIRONMENTAL IMPACT STATEMENT

FOR

PROPOSED ARIZONA HAZARDOUS WASTE MANAGEMENT FACILITY

Prepared by:

U. S. Environmental Protection Agency
Region 9
San Francisco, California

Cooperating Agencies:

U. S. Bureau of Land Management
Phoenix, Arizona

Arizona Department of Health Services
Phoenix, Arizona

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Long Beach, California

In Association With:

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Phoenix, Arizona

John Wise
John Wise
Acting Regional Administrator
EPA Region 9

FINAL ENVIRONMENTAL IMPACT STATEMENT

PROPOSED ARIZONA HAZARDOUS WASTE FACILITY

LEAD AGENCY:

U. S. Environmental Protection Agency

COOPERATING AGENCIES:

Arizona Department of Health Services
U. S. Bureau of Land Management

PROPOSED ACTION:

Sale of Federal land to the State of Arizona for siting a hazardous waste management facility.

ABSTRACT:

The State of Arizona has asked to purchase a one-square-mile parcel of land from the U. S Bureau of Land Management for siting a state-owned, contractor-operated hazardous waste facility. At BLM's request, EPA agreed to serve as lead agency in preparing the EIS on the proposed land transfer.

This EIS addresses concerns related to selection of a facility site. Impacts related specifically to the design and operation of the facility itself would be addressed through future permits issued by EPA and the Arizona Department of Health Services.

In the Draft EIS, potential impacts are assessed using representative facility designs typical of a "low technology" (land disposal) facility capable of handling the types and amounts of wastes generated in Arizona. Alternatives considered are the State's proposed site near the community of Mobile, alternative sites in the Western Harquahala Plain and the Ranegras Plain, and the No Action Alternative. For each site, the EIS considers potential impacts on ground water, air quality, public health and safety, biological communities, cultural resources, and other resources. Mitigation measures are identified for those impacts which would not be addressed through the facility's permits.

The Final EIS addresses comments on the Draft EIS by presenting additional discussion of several major environmental issues. It also assesses the impacts of a representative "high technology" facility, which uses a high temperature incinerator to dispose of PCB wastes and other incinerable hazardous wastes.

FOR FURTHER INFORMATION, CONTACT:

Chuck Flippo, EPA Region 9, 215 Fremont Street, San Francisco, CA 94105; (415) 974-8128

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The following figures appeared in the Draft EIS. They have been corrected and reprinted here.

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CORRECTED TABLES

These tables appeared in the Draft EIS. They have been corrected and reprinted here.

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ABBREVIATIONS

ADHS	Arizona Department of Health Services
ADOT	Arizona Department of Transportation
ARS	Arizona Revised Statutes (Compilation of Arizona State laws)
BLM	U. S. Bureau of Land Management
CAP	Central Arizona Project
CFR	Code of Federal Regulations (Compilation of Federal regulations published by U. S. Government Printing Office; 40 CFR refers to Title 40, Protection of the Environment)
DEIS	Draft Environmental Impact Statement
DOT	U. S. Department of Transportation
DPS	Arizona Department of Public Safety
EIS	Environmental Impact Statement
EPA	U. S. Environmental Protection Agency
FR	*Federal Register* (daily publication of new and amended Federal regulations, published by U. S. Government Printing Office)
PEC	Provident Energy Company

SECTION I

INTRODUCTION

This Final Environmental Impact Statement (EIS), together with the Draft EIS (EPA publication #909/9-83-001, January, 1983), completes the EIS on the Arizona Hazardous Waste Management Facility. In response to comments made on the Draft EIS, this Final EIS presents:

- Corrections of errors in the Draft (Section II, Errata Sheet).
- Additional discussion of the facility description presented in the Draft EIS (Section II, Facility Description).
- Discussion of major environmental issues covered in the Draft EIS which were the subject of public comments (Section IV, Major Environmental Issues).
- A new presentation of mitigation measures, including a summary chart of measures and the impacts they mitigate (Section V, Mitigation Measures).
- The written and oral comments presented to EPA, and the responses to those comments (Section VI, Public Comments and Responses).

This document plus the Draft EIS constitute the complete environmental impact statement on the Arizona Hazardous Waste Facility. Additional copies of the Draft EIS are available from EPA Region 9, 215 Fremont St, San Francisco, CA, 94105.

BACKGROUND

The State of Arizona proposes to purchase a one-square-mile parcel of Federal land from the U. S. Bureau of Land Management (BLM) on which to site a hazardous waste management facility. The land is located six miles southwest of the community of Mobile in Southern Maricopa County. The State plans to contract with a private firm to finance, build, and operate a facility that would treat, store, and dispose of hazardous wastes.

BLM has determined that transfer of Federal land for the purpose of siting a hazardous waste facility requires the preparation of an environmental impact statement (EIS) to comply with the National Environmental Policy Act of 1969. This EIS has been prepared to meet that requirement by providing BLM with information about the potential environmental impacts of siting a hazardous waste facility on the site proposed by the State, siting the facility at an alternative site, or not transferring land to the State for this purpose (the "no action alternative").

The land transfer addressed in this EIS is one step in the State's process of developing the hazardous waste facility. This process is briefly described below.

Selection of a Site

In 1980, the Arizona State Legislature directed the Arizona Department of Health Services (ADHS) to identify potential hazardous waste sites in the State, and to prepare a report presenting its recommendations to the Legislature. In its legislation mandating the ADHS study (SB 1283, ARS 36-2800), the Legislature set forth certain criteria ADHS was to use in selecting potential sites. These criteria and ADHS's siting methodology are summarized in Section IV, Alternatives.

In January, 1981, ADHS presented its finding to the Legislature in the "Final Report to the Arizona State Legislature Regarding Siting a Statewide Hazardous Waste Disposal Facility" (1).* The Report recommended selection of a site in the Western Harquahala Plain siting area, but also stated that the Ranegras Plain and the Rainbow Valley (Mobile) areas were worthy of consideration by the Legislature (see Figure I-1).

The Legislature chose to site the facility in the Mobile area. In SB 1033 (ARS 36-2802), passed in February of 1981, the Legislature directed ADHS to obtain the 640-acre parcel of land legally described as Section 32, Township 4 South, Range 1 West of the Gila and Salt River Base and Meridian.

Following passage of SB 1033, ADHS approached BLM to buy the proposed site. ADHS also began developing a Request for Proposals that would be used to solicit bids from private firms to design, build, and operate the facility. The bidding period closed on February 25, 1983. ADHS expects to make the final selection of a contractor in July, 1983.

The Land Transfer, the EIS, and the Facility Permit

After it received the State's request to buy its land, BLM determined that sale of the federal land for a hazardous waste site would be a "major federal action significantly affecting the quality of the human environment." This meant that, under the provision of the National Environmental Policy Act of 1969, an EIS would be required. Because of EPA's greater expertise in the field of hazardous waste management, BLM asked EPA to prepare the EIS.

* Copies of this report are available from ADHS, Bureau of Waste Control, 1740 W. Adams St., Phoenix, AZ, 85007.

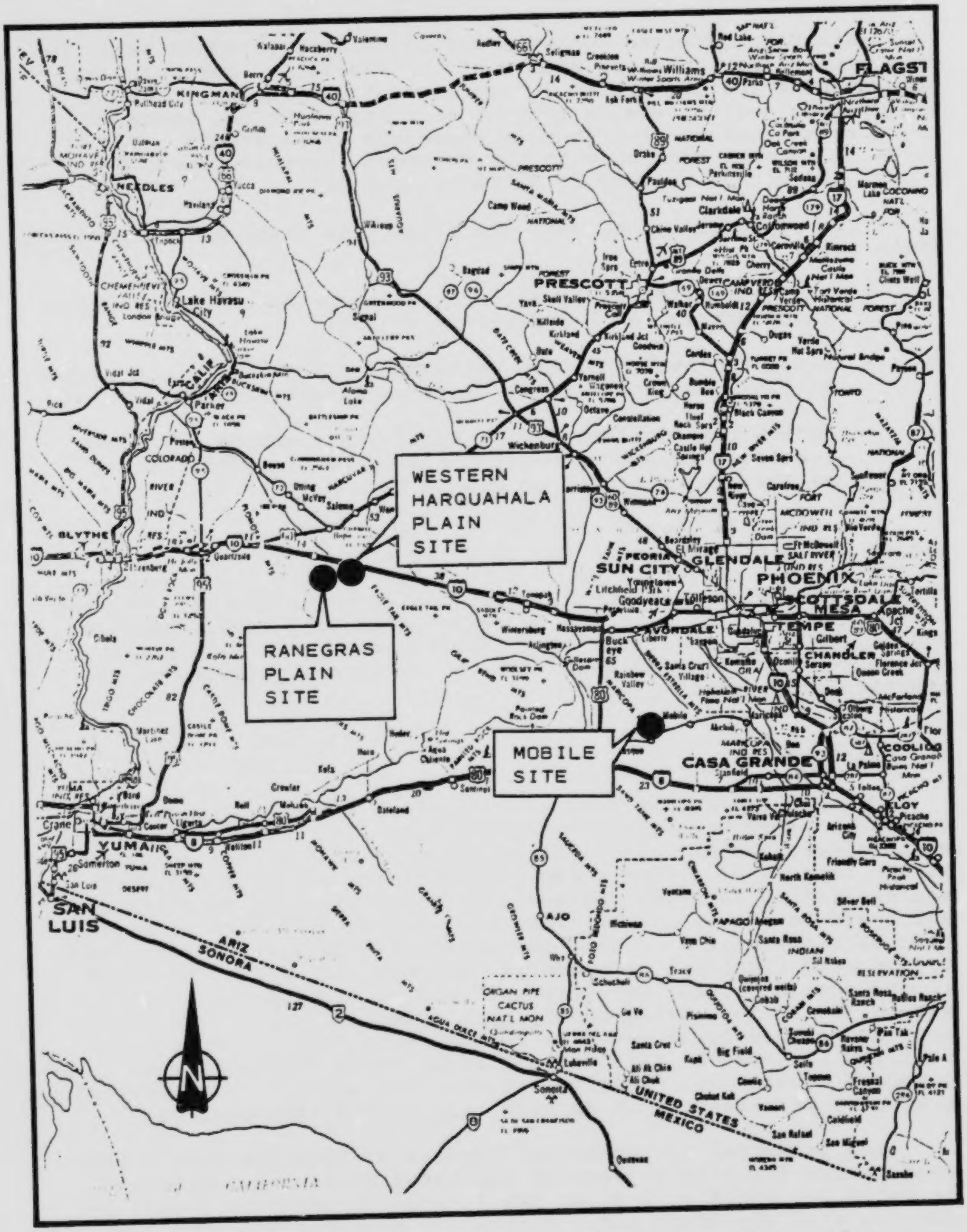
WESTERN HARQUAHALA PLAIN SITE
RANEGRAS PLAIN SITE
MOBILE SITE
KINGMAN
NEEDLES
FLAGST
PRESCOTT
Williams
Lake Havasu City
Parker
Wickenburg
BLYTHE
Quartzsite
SUN CITY
GLENDALE
PHOENIX
SCOTTSDALE
MESA
TEMPE
CHANDLER
AVONDALE
CASA GRANDE
COOLIDG
ELOY
Gila Bend
AJO
YUMA
SAN LUIS
Sonoyta
ORGAN PIPE CACTUS NAT'L MON
ARIZ
SONORA
UNITED STATES
MEXICO
CALIFORNIA
N

Figure I-1. Locations of the proposed and two alternative sites.

This EIS addresses concerns specifically related to selection of a site rather than the design of the facility. For purposes of preparing the Draft EIS, a "representative" facility design was used to suggest what a typical facility might be, based on the size and nature of Arizona's hazardous waste stream. The kinds of impacts addressed in the document, however, could be associated with a variety of facility designs.

This approach is the most useful at this stage of the project, given that:

- BLM's decision concerns title transfer of the site, rather than approval of the facility itself;
- Since the State has not yet selected a facility contractor, no final design proposal has been submitted; and,
- Before the facility may be built and operated, it must receive a hazardous waste facility permit, which would be the equivalent of an EIS on the facility design.

The EIS will become part of the record BLM will use in determining whether to transfer the proposed site or an alternative site to the State. (See DEIS pp. 1-7 to 1-9.) If the land is transferred, ADHS will complete negotiations with the facility contractor on terms of the contract to design, finance, build, operate, and maintain the facility. The facility contractor would then design the facility and apply for the necessary permits before starting construction.

THE DRAFT EIS

The Draft EIS considers the potential impacts of locating a hazardous waste facility at three alternative sites: Mobile, the Western Harquahala Plain, and the Ranegras Plain. The analysis of the impacts of siting a facility at these sites is based on representative facility designs typical of existing facilities which handle the types and amounts of wastes generated in Arizona (see DEIS Appendix D). This representative facility is oriented toward land treatment and landfill disposal of wastes, although it includes a solvent recovery unit and an acid/alkali neutralization operation. Being essentially oriented toward land treatment and disposal, it could be considered a "low technology" facility in terms of existing hazardous waste treatment and disposal technology. That is, it does not utilize "high technology" treatment processes, such as high temperature incineration.

The potential environmental impacts of locating such a representative facility at each of the three sites are summarized in Table 2-1 (DEIS p. 2-8, et seq.), and discussed in detail in Section 4 of the Draft EIS. Mitigation measures are also presented in DEIS Section 4.

Notice of the availability of the Draft EIS was published in the Federal Register of January 28, 1983 (48 FR 4046), and in legal notices in the Phoenix Gazette and the Arizona Republic on January 14, 1983. Notices were also mailed to some 1500 individuals, agencies, and organizations, mostly in Arizona, on January 14, 1983.

Over 300 copies of the Draft EIS were distributed for public review. On March 1, 1983, two public hearings were held to receive comments, one in Phoenix and one in Buckeye, Arizona. In addition, a public meeting was held in Mobile on February 17, 1983, to discuss the EIS and answer questions. Notice of the hearings and the meeting was included in the notice of availability of the Draft EIS mailed on January 14. In addition, a press release was sent to a number of newspapers in Arizona (see Appendix G). Articles announcing the meeting and the hearings appeared in the Buckeye Valley News of January 27, 1983 and February 24, 1983.

THE FINAL EIS

This Final EIS has been prepared to respond to comments on the Draft EIS. A few commenters corrected errors in the text of the Draft; these corrections are included in Section II. Other commenters questioned the analysis or expressed concerns about the proposed facility and its impacts. Many of these comments addressed similar issues. Rather than respond to each comment individually, the Final EIS discusses several key environmental issues and covers a range of comments dealing with those issues. These discussions appear in Section IV. Those comments which are not addressed in Section IV are answered individually in Section VI. All of the comments, including the transcript of the public hearings held on the Draft EIS, appear in Section VI.

Several commenters, including a company bidding on the facility construction and operation contract, faulted the Draft EIS for not analyzing a "high technology" facility as well as the "low technology" one. The bidder who commented proposes to develop an incinerator if chosen as the facility contractor. In response to these comments, this Final EIS includes an analysis of the potential impacts of such a facility. This analysis is presented in Section III; certain impacts are discussed in greater detail in Section IV.

The Draft EIS summarizes the potential impacts of the proposed facility in DEIS Table 2-1. The table does not, however, include a summary of the mitigation measures associated with those impacts. To provide a quick guide to the impacts and their mitigation measures, a summary table appears in Section V of this document.

AGENCY'S PREFERRED ALTERNATIVE

BLM supports ADHS's proposal for location of the facility near Mobile.

SECTION II

ERRATA AND CLARIFICATIONS

The following statements correct errors or clarify the text of the Draft EIS.

ERRATA

DEIS Page	Correction
3-3,4	"Chirioni-Gachado-Rock" should read "Chirioni-Gachado-Rock Outcrop."
3-4	"Avondale clay" should read "Avondale clay loam."
3-6	Errors in Table 3-2 have been corrected and the table is reprinted on p. II-3.
3-17	Amphibians and Reptiles: The desert tortoise and the Gila monster are not listed as "endangered" by the Arizona Game & Fish Department. In the current edition of *Threatened Native Wildlife in Arizona* (approved by the Arizona Game and Fish Commission on 10 December 1982), the desert tortoise is listed in Group 3, which means that its continued presence in Arizona could be in jeopardy in the forseeable future. The Gila monster is not listed in this publication, but is protected by Arizona Game and Fish Commission Order 43. This Commission Order has the force of law and forbids the taking (i.e., collection or killing) of Gila monsters.
3-18	Mammals: Desert bighorn sheep are listed in Group 3 (see above) in *Threatened Native Wildlife in Arizona*. The spotted bat is no longer listed.
3-18	"Arizona Department of Fish and Game" should read "Arizona Game and Fish Department."
3-19	Errors in Figure 3-4 have been corrected, and the figure is reprinted on p. II-4.
3-20	The legend for Figure 3-5 (DEIS p. 3-20a) was omitted from the Draft EIS. The figure and legend are given on pp. II-5, II-6.

3-32	The second sentence in the third paragraph should read: "These soils have moderately rapid infiltration rates, possess moderate available water capacity, and contain moderate amounts of soluble salts in the subsoil and substratum."
3-36	In the fourth paragraph, the figure 14.6 feet/year should be 1.8 feet/year.
3-46	Errors in Figure 3-9 have been corrected, and the figure is reprinted here on p. II-7.
3-62	The first sentence of the sixth paragraph should read: "The U.S. Department of the Interior, Fish and Wildlife Service, has listed the bald eagle, Yuma clapper rail, zone-tailed hawk, osprey, and peregrine falcon as endangered species."
3-64	Errors in Figure 3-14 have been corrected and the figure is reprinted here on p. II-8.
4-50	In the third paragraph, the fuel consumption figure for the Mobile site should be 5,100 gallons per month rather than 8,300.
Appendix F, 4-1	Table 4-1 in Appendix F is incomplete. The table has been corrected and updated to show data through 1981 (p. II-9).

CLARIFICATION REGARDING THE WESTERN HARQUAHALA PLAIN AND RANEGRAS PLAIN SITES

The Draft EIS shows the Western Harquahala Plain and Ranegras Plain sites as each consisting of two one-square-mile parcels, while the Mobile site was shown as one one-square-mile parcel. This is because ADHS has not identified the specific one-square-mile parcel it would seek to purchase if the Legislature approved either of these sites as an alternative to the Mobile site. ADHS has identified two preferred parcels at each site. Both parcels are used in the Draft EIS for the analysis of environmental impacts at the sites. One of the two parcels would be selected if the Legislature were to approve purchase of an alternative site. The Draft EIS also failed to note that Section 30, one of the two parcels at the Western Harquahala Plain site, is State land rather than federal land.

TABLE 3-2. TEMPERATURE, PRECIPITATION, AND EVAPOTRANSPIRATION AT SELECTED LOCATIONS

	Normal Temperature (°F)*			Total Precipitation (inches)*			Potential Evapotranspiration (inches)†			Actual Evapotranspiration (inches)†		
Month	Casa Grande	Gila Bend	Phoenix	Casa Grande	Gila Bend	Phoenix	Casa Grande	Gila Bend	Phoenix	Casa Grande	Gila Bend	Phoenix
Jan	50.6	52.6	51.2	0.76	0.62	0.71	0.44	0.57	0.53	0.44	0.57	0.53
Feb	54.9	56.5	55.1	0.67	0.44	0.60	0.64	0.80	0.76	0.64	0.56	0.76
Mar	59.7	61.4	59.7	0.69	0.65	0.76	1.64	1.51	1.78	1.51	0.62	1.78
Apr	67.7	69.5	67.7	0.35	0.30	0.32	2.70	3.13	3.00	0.35	0.22	0.42
May	76.2	77.9	76.3	0.11	0.10	0.14	5.05	5.36	5.18	0.09	0.11	0.12
Jun	84.8	85.9	84.6	0.16	0.04	0.12	7.41	7.54	7.54	0.17	0.07	0.07
Jul	91.1	93.1	91.2	0.95	0.76	0.75	8.46	8.64	8.37	1.25	0.82	1.06
Aug	88.9	91.5	89.1	1.56	1.08	1.22	7.71	7.97	7.71	1.32	0.91	1.06
Sep	83.6	85.8	83.8	0.79	0.50	0.69	6.17	6.51	6.17	0.78	0.47	0.82
Oct	72.1	74.7	72.4	0.63	0.33	0.46	3.26	3.76	3.28	0.28	0.36	0.44
Nov	59.5	61.6	59.8	0.56	0.35	0.46	1.11	1.20	1.20	0.78	0.45	0.62
Dec	51.8	54.0	52.5	0.88	0.59	0.82	0.49	0.53	0.29	0.49	0.53	0.29
Annual	70.1	72.0	70.3	8.11	5.76	7.05	45.6	47.65	45.83	8.10	5.69	7.38

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* Climatological Data; Annual Summary [for] Arizona, Vol. 84, No. 13. National Climatic Center, National Oceanographic and Atmospheric Administration, Asheville, N.C., pp. 2, 3, 5. [1980 data]

† Arizona Environmental Consultants. Inc. First Draft [of] Environmental Impact Report for the Provident Energy Company Oil Refinery, Maricopa County, Arizona.

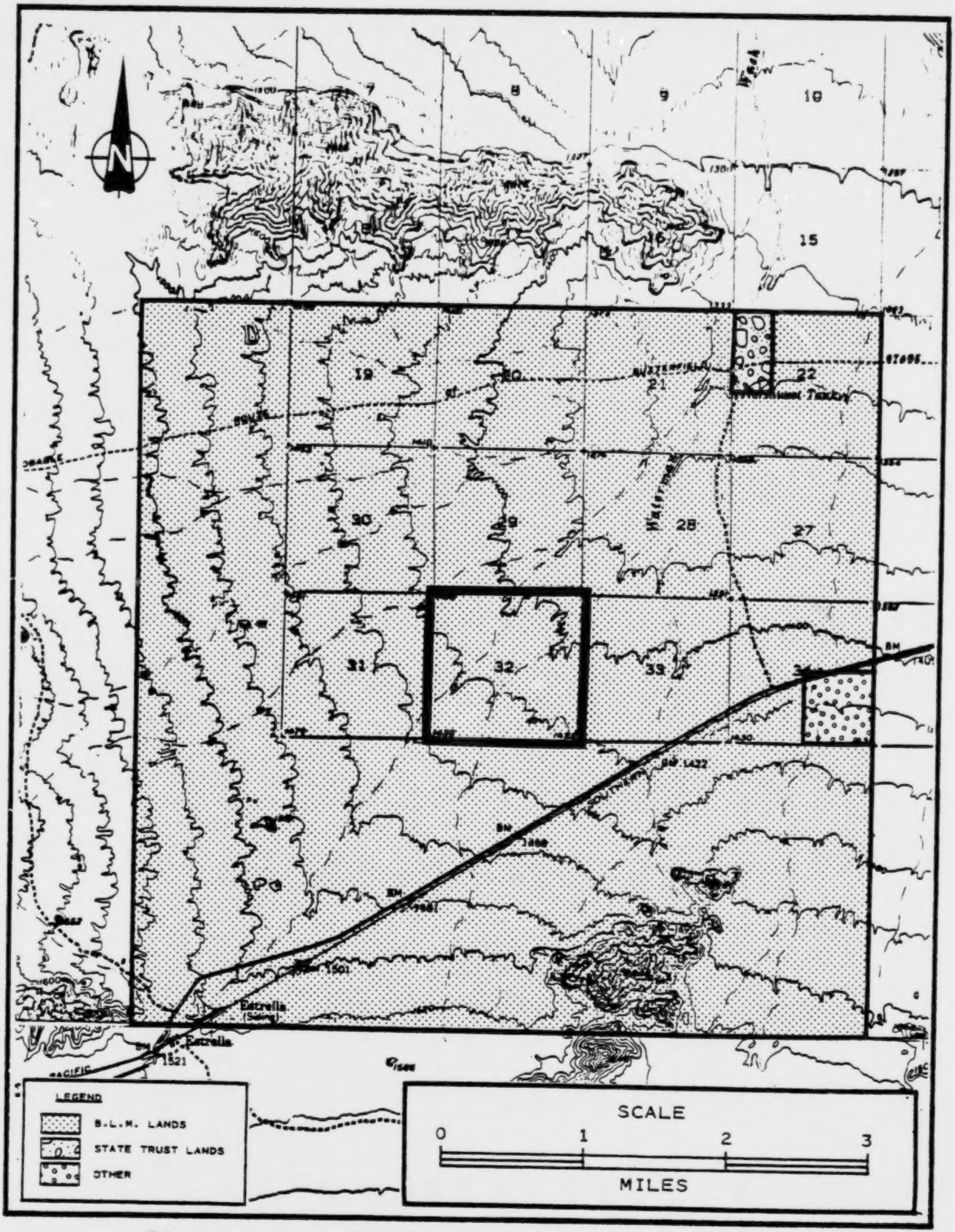
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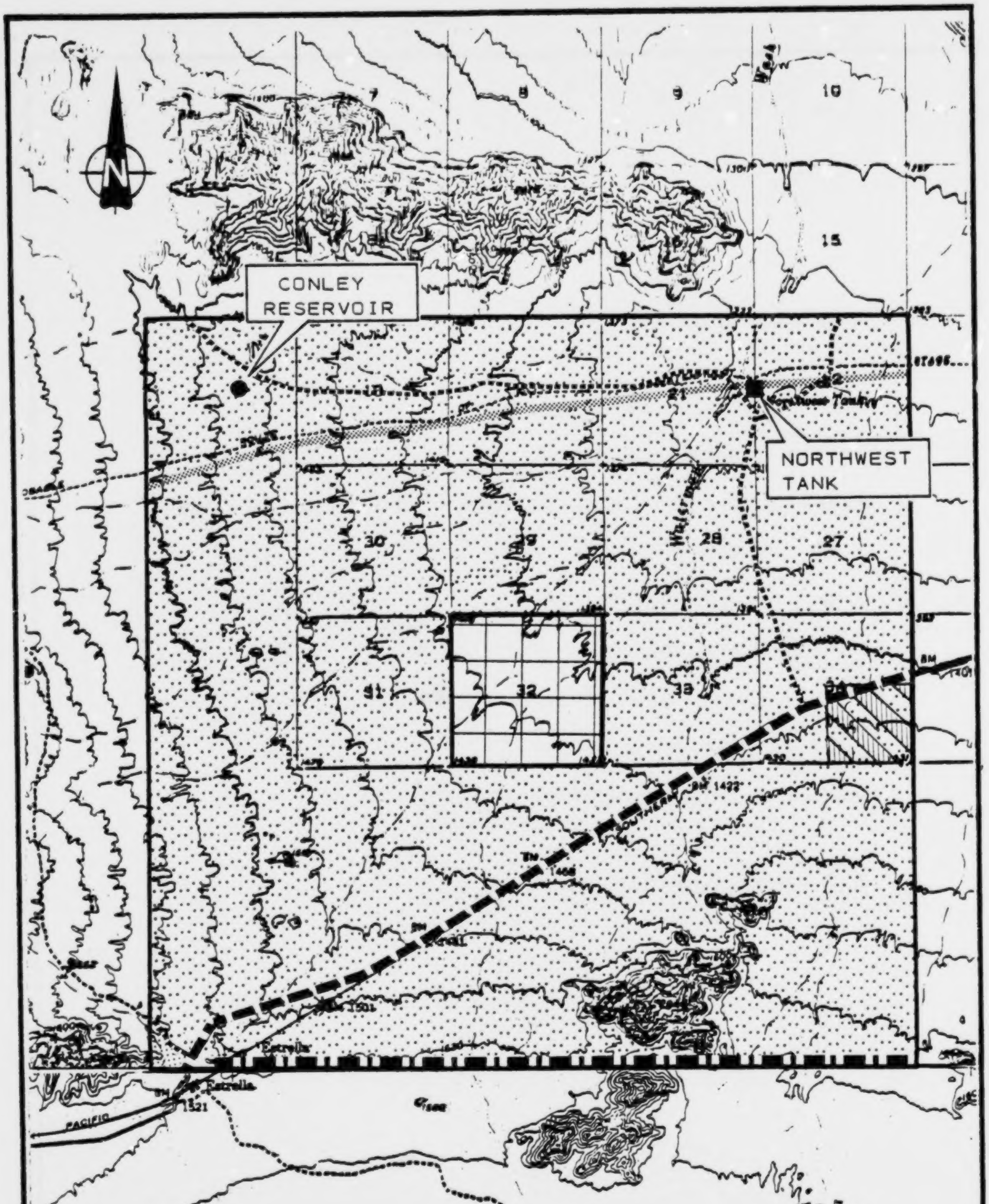
Figure 3-4. Land jurisdiction at Mobile site.



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NORTHWEST
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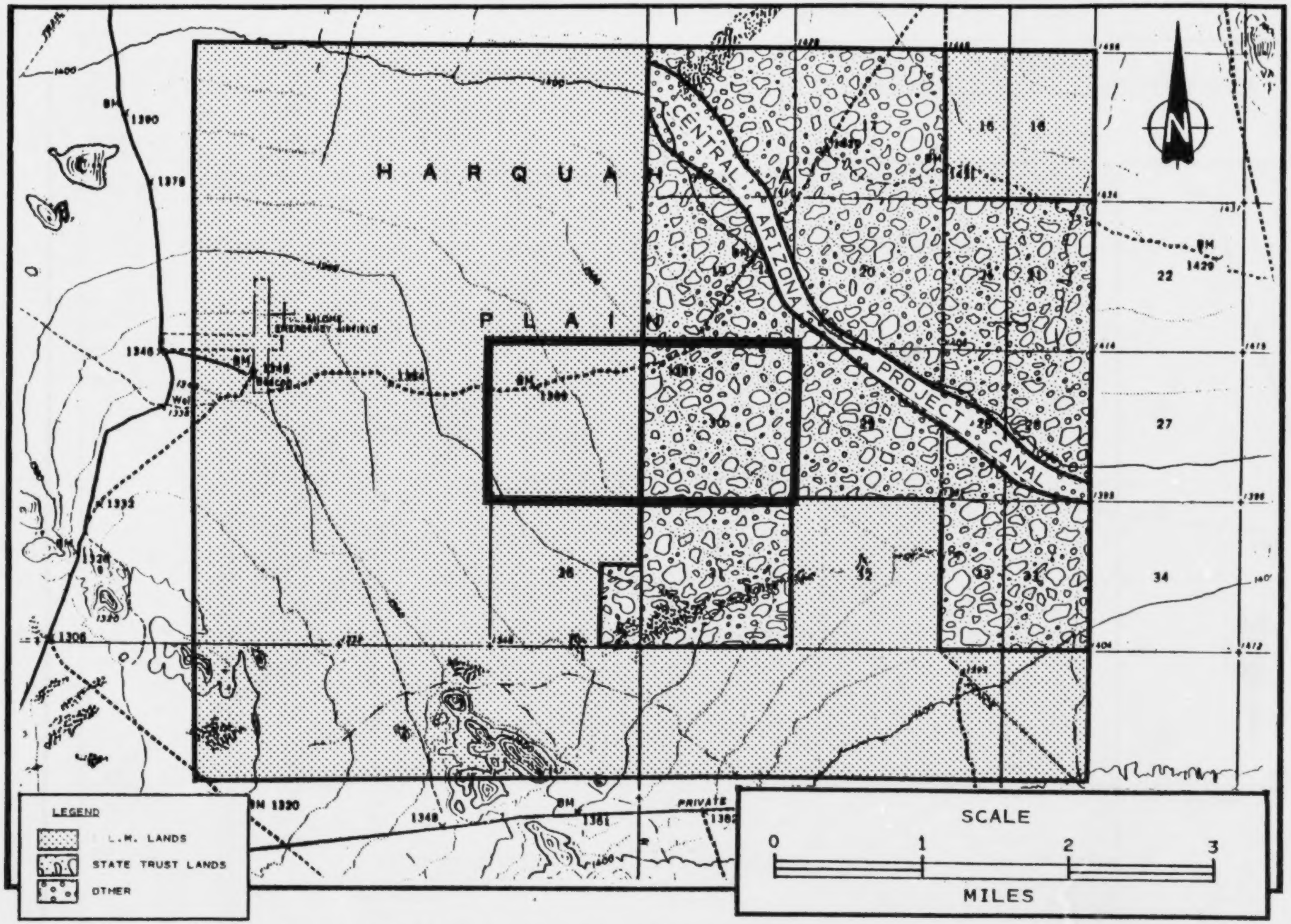
PACIFIC

Figure 3-5. Existing land use at the Mobile site.

LEGEND

▬ ▬ ▬	UNPAVED IMPROVED ROAD
———	UNIMPROVED ROAD
▪▪▬▪▪	PROPOSED 230KV WOODPOLE TRANSMISSION LINE
■	NORTHWEST TANK
●	CONLEY RESERVOIR
▒	BLM WILDERNESS STUDY AREA UNIT #2-164
░	CONLEY BLM GRAZING ALLOTMENT
▥	ZONED RURAL - 190
▬	PROPOSED EQUESTRIAN TRAIL (BUTTERFIELD STAGE ROUTE)
⊞	PROPOSED SITE

Figure 3-5a. Legend to Figure 3-5.


HARQUAHALA PLAIN
CENTRAL ARIZONA PROJECT CANAL
PRIVATE
LEGEND
L.M. LANDS
STATE TRUST LANDS
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SCALE
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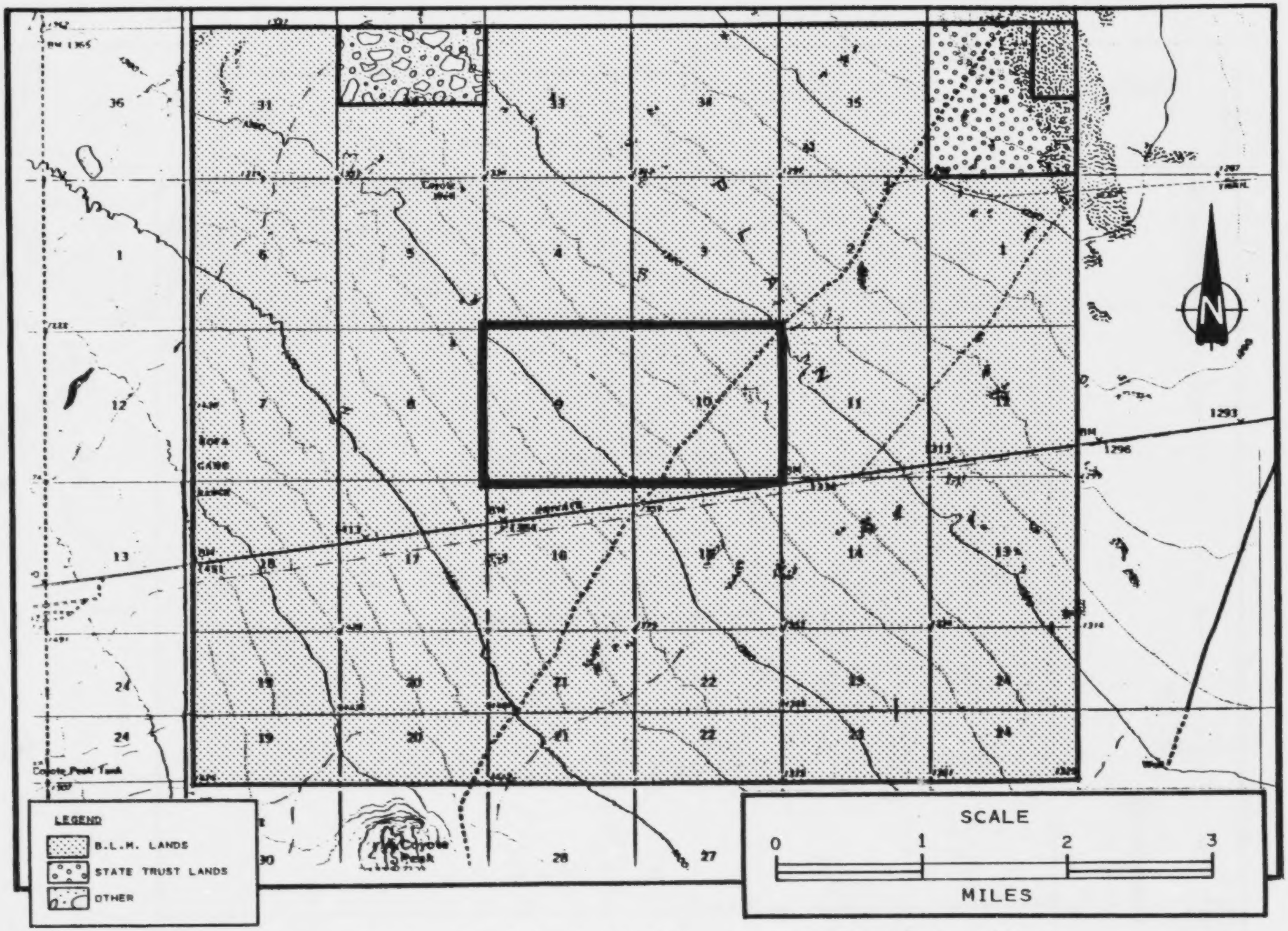
Figure 3-9. Land jurisdiction at Western Harquahala Plain site.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Coyote Peak
Coyote Peak Tank
LEGEND
B.L.M. LANDS
STATE TRUST LANDS
OTHER
SCALE
0
1
2
3
MILES

Figure 3-14. Land jurisdiction at Ranegras Plain site.

Appendix F

TABLE 4-1. STREAM FLOW RECORDS FOR WATERMAN WASH NEAR BUCKEYE, USGS STATION #09514200 (DRAINAGE AREA - 403 mi^2)*

Date (month/year)	Peak Discharge (cfs)
9-64	2,680
8-65	1,200
12-65	1,400
8-66	600
9-66	5,560
9-67	6,300
11-67	520
12-67	560
8-68	400
8-69	400
8-70	1,600
9-70	700
8-71	2,080
3-72	2,000
73	†
9-74	100 * *
10-75	1,200
9-76	1,180
10-77	740
8-78	1,150
8-79	†
2-80	2,220
8-81	†

* The station is a peak flow crest stage gage.

† No flow above 400 cfs (pin height).

** Field estimate.

Source: (Field notes, U.S. Geological Survey, 1983)

SECTION III

FACILITY DESCRIPTION

THE REPRESENTATIVE DESIGNS

The Draft EIS describes "representative" designs for the proposed facility (DEIS Appendix D). The designs include surface impoundments for storage or treatment of wastes, a landfarm unit for treatment of biodegradable organic wastes, a solvent recovery unit, and a secure landfill for burial of wastes which could not be further treated or recycled.

Several commenters apparently interpreted these representative design features to be an actual design proposal for the facility. This is not the case. No facility design is available for the EIS, since the State has not selected the contractor who would be responsible for designing the facility. In the absence of an actual facility design, the representative facility designs have enabled the EIS preparers to assess the nature and likely extent of the environmental impacts which might be associated with a facility typical of those handling the types and amounts of hazardous wastes generated in Arizona.

Because the representative designs consist primarily of simple or "low level" technologies such as land disposal, some commenters felt "high level" or advanced technologies such as incineration were being excluded from consideration in designing the facility. Again, this is not the case. The representative designs are meant only to illustrate the kinds of facility features which could be developed economically in Arizona, given the types and amounts of wastes generated within the State. A bid based on the use of advanced technologies could meet the conditions set forth in ADHS's Request for Proposals and receive full consideration by the State. The decision not to include such technologies in the representative designs presented in the Draft EIS was based strictly on the judgement of the EIS preparers as to the likely nature of the facility proposals. It was not meant to preclude any particular technology.

AN ALTERNATIVE DESIGN INCLUDING INCINERATION

Since the Draft EIS was released, a bid has been submitted to ADHS which includes incineration as a major component. If the bid were accepted, the proposed incinerator would handle polychlorinated biphenyls (PCBs) from several states as well as hazardous wastes generated within Arizona. Based on comments submitted by the bidder (ENSCO, Inc.), a discussion of the potential impacts associated with a PCB/hazardous waste incinerator is included in this Final EIS. Many of the environmental impacts would not differ significantly from those associated with the representative designs described in the Draft EIS. These impacts are described in this section. Other potential impacts, such as air quality, require more lengthy discussion. These are addressed in more detail in Section IV.

Under the incinerator proposal, the facility contractor would initially operate a mobile incinerator for hazardous wastes and liquid PCBs, and a rotary kiln for PCB-contaminated solid wastes.* (See Figure III-1.) A permanent incinerator would be constructed later if it were economically justified. The incinerator would be used primarily to destroy organic wastes, including PCBs, pesticides and other chlorinated organics, and unrecoverable solvents.

It is estimated that 10,000 to 12,000 tons per year of PCB wastes would be accepted at the facility, most of it from states other than Arizona.† (See Table C-3, Appendix C.) The ability of the facility to handle PCB waste from a regional market would make it economically feasible to develop an incinerator in Arizona.** The PCB waste would be in addition to the hazardous

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* The description presented here is based on preliminary concepts provided by ENSCO Inc. (2,3). If this bidder were selected by ADHS to be the facility contractor, an actual design would be developed and submitted as part of the permit applications for hazardous waste and PCB disposal.

† This figure is based on ENSCO's estimate for a 100% capacity operation (3). "PCB waste," as used in this document, refers to all types of Federally-regulated wastes containing or contaminated by PCBs. (See Section V.)

**The initial costs of developing an incinerator are high, running to several million dollars depending on size (4). It is not likely that the hazardous waste market within Arizona would economically support development of an incinerator at this time. An incinerator that could attract PCB waste from a regional market, on the other hand, could realize enough economic return in its early years to make the incinerator a feasible investment. There would be a strong market for the incinerator service, since disposal options for PCB generators are very limited. Most PCB wastes must be either incinerated or chemically treated. For those PCB wastes which can be landfilled, the cost of land disposal may be nearly as high as the cost of incineration (5). There are a limited number of facilities which handle PCB waste; the only other PCB incinerators currently in operation are in Arkansas and Texas. Consequently, a PCB incinerator in Arizona probably would be able to attract enough PCB waste from the western states to support the high initial investment.

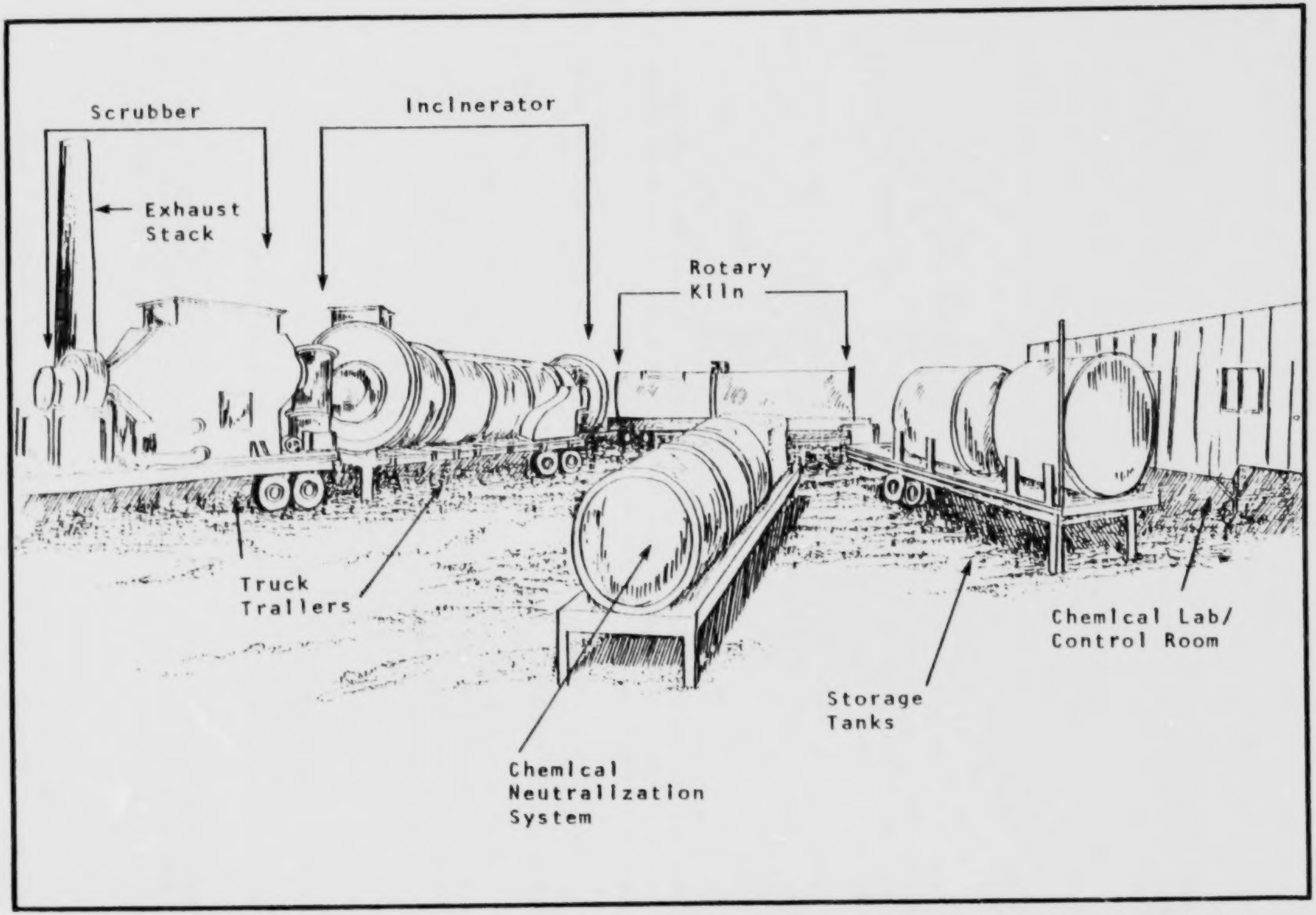
Scrubber
Incinerator
Exhaust Stack
Rotary Kiln
Truck Trailers
Chemical Lab/ Control Room
Storage Tanks
Chemical Neutralization System

Figure III-1. Artist's concept of mobile PCB/hazardous waste incinerator components.

waste generated within the State. Out-of-state waste other than PCBs could be accepted by the facility, though no estimate of the amount can be made at this time. (See DEIS Appendix C.)

The incinerator exhaust gases would be "scrubbed" to remove hydrogen chloride gas (HCl) formed in the incinerator.* Since ash from the incinerator could contain hazardous constituents from the burned wastes, it would be disposed of in the landfill at the facility.

A rotary kiln would be used in conjunction with the incinerator to volatilize PCBs and other substances from solids such as capacitors or contaminated dirt. The solids which remained after the volatilized substances had been incinerated would be sent to the landfill.

As in the "low technology" design described in the Draft EIS, resource recovery would be practical at this type of facility. A solvent recovery unit would likely be included. In addition, hydrochloric acid (HCl) and calcium chloride ($CaCl_2$) could be recovered from the incinerator scrubber effluent. It is likely that drums used to transport the wastes would be recovered after use by "baking off" and incinerating the organic residues. Other potential recovery products include water from neutralizing acids and bases and heat from incineration.

The mobile incinerator would occupy about one acre of land (200' x 200'). Some additional land would be used to store wastes to be incinerated.

The incinerator would permanently destroy some hazardous materials that otherwise would be disposed of in the landfill and/or the landfarm. It is anticipated that development of an incinerator would preclude development of a landfarm altogether, since the types of wastes treated by landfarming, as described in the Draft EIS would be incinerated. Since the amount of wastes to be landfilled probably would be reduced, the landfill could be smaller than that projected in the Draft EIS. The landfill would not be eliminated, however, since incinerator ash and non-incinerable solids would be landfilled. Organic wastes containing heavy metals would also be landfilled.

Other operations, such as neutralization ponds, evaporation ponds, a solvent recovery unit, and support facilities (lab, maintenance buildings, etc.) would be similar to those described in the Draft EIS, though the size and capacity specifications could vary according to the final operating plans of the facility contractor. For purposes of comparison, it is assumed that these other operations at the "high technology" facility are the same as those described in the Draft EIS for the "low technology" facility.

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* A "scrubber" is an air pollution control device that uses water to contact and absorb pollutants and prevent their emission through the stack.

Absence of a landfarm and development of a smaller landfill would reduce the total area of land needed for the treatment and disposal operations, compared to the representative facility described in the Draft EIS. However, additional storage space would probably be needed for the PCB wastes. The net reduction in affected area would likely be in the range of 5 to 15 acres.

Both energy and water requirements for the incinerator facility would be greater than for the "low technology" facility. The addition of PCB wastes would also mean an increase in traffic to the facility of one to two trucks per day.

Potential Environmental Consequences

Physical Setting

Topography and soils. The area of altered topography could be 5 to 15 acres smaller than that identified in the Draft EIS (DEIS p. 4-1). Mitigation measures would be the same.

Geology. Impacts on geology and mitigation measures would be the same as those identified in the Draft EIS. The potential for subsidence due to ground water withdrawal is discussed in Section IV, Physical Setting.

Water Resources

Ground water. The risk of ground water contamination could be reduced somewhat by the absence of a landfarm as a potential source of contamination. The incinerator itself would not pose a risk to ground water, but storage units serving the incinerator could pose leakage problems if not properly designed, constructed, and maintained. Such units would be subject to Federal and State regulations, as described in Section IV, Ground Water, and in Section V. Mitigation measures would be addressed in the hazardous waste permit. (See Section V.)

Surface water. Impacts and mitigation measures could be similar to those for the representative "low technology" facility, although absence of the landfarm could reduce the area of facility land subject to flooding. Since storage units for incinerator-bound waste would likely be covered tanks, the potential for run-on/run-off problems would be less for these units than for the surface impoundments. Mitigation measures would be addressed during the permit process. (See Section V.) Additional discussion of surface water impacts appears in Section IV.

Air Quality

The following discussion summarizes a lengthier analysis of potential air quality impacts in Section IV.

Volatile organic compounds (VOCs). A "high technology" facility would be expected to emit fewer VOCs than the "low technology" facility: between 3 and 70 tons per year, as opposed to 55 to 298 tons per year.

Toxic emissions. Absence of a landfarm would eliminate one source of potentially toxic gaseous emissions. The incinerator, however, could emit trace amounts of such contaminants. Experience at other facilities indicate that the incinerator could also emit dioxin and furan.* Insufficient data are available at this time to estimate the likely amount of these emissions. Before the facility would be issued a PCB disposal permit, emissions estimates would be made and a health risk assessment conducted.

Particulates. The incinerator could release between 1 and 91 tons per year of particulate emissions (e. g., ash, condensed vapor, or soot) resulting in a maximum additional concentration of about 13 ug/m^3 (24-hour average). This would add to any existing particulate problems in the area around the facility due to blowing dust, though the amount of additional emissions would be insignifcant compared to the large amounts of dust which can originate in these areas. (See DEIS Tables 3-3 and 3-11.)

Mitigation measures are discussed in Section IV, Air Quality, and in Section V.

Public Health and Safety

Spill risks. Operational spill risks are assumed to be the same as for the representative "low technology" facility. Additional transportation spill risks would be related to the number of PCB shipments generated by the presence of the incinerator. PCB shipments which currently pass through Arizona from the west en route to existing incinerators in Arkansas and Texas would likely go to the facility. Additional PCB shipments not currently passing through Arizona could also be routed to the proposed facility. An average of one to two trucks per day carrying PCB wastes could be expected at the facility (6). This would result in a small increase in accident risk along access routes. This could be offset by a reduction in accident risk along routes in Arizona and other states which would no longer be used by the PCB transporters. See Section IV, Public Health and Safety: Spill Risks, for additional discussion of PCB transportation.

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* Tetrachlorodibenzodioxin (TCDD) and Tetrachlorodibenzofuran (TCDF).

Mitigative measures for both operational and transportation spills would be the same as those described in the Draft EIS. Additional discussion of spill risks appears in Section IV, Public Health and Safety: Spill Risks. This includes a spill scenario that could apply to either a "low technology" or "high technology" facility.

Valley Fever. Absence of a landfarm and development of a smaller landfill could reduce the potential for release of Valley Fever spores due to soil disturbance. Mitigation measures would be the same as those presented in the Draft EIS and in the discussion of Valley Fever in Section IV.

Odors. Odor impacts would be the same as those described in the Draft EIS. An incinerator does not release significant odors under normal operating conditions.

Noise. Potential noise impacts could be increased somewhat by the addition of an average of one to two trucks per day carrying PCBs. This should not, however, significantly increase the noise problems described in the Draft EIS. Noise from the incinerator itself would not be heard off-site.

Visual Resources

The incinerator would have a smokestack which would likely stand about 40 feet high. The exact height would depend on factors such as the stack diameter and the distance between the incinerator and other buildings at the facility (because of the effect of buildings on air currents affecting the stack). In any case, the stack and other portions of the incinerator could increase the visibility of the facility. Also, a plume of steam from the stack probably would be visible when the humidity is high. Consequently, the visual impacts could be somewhat greater than for the "low technology" facility.

These impacts could be minimized by placing the incinerator in a location which would allow construction of the lowest possible stack (taking into account topography and various engineering factors). Mitigation measures suggested in the Draft EIS, such as use of natural color tones, could also help reduce the contrast between the facility and the background.

Ecological Resources, Land Use, and Cultural Resources

The potential impacts in these areas would not be expected to differ substantially from those described in the Draft EIS.

Socioeconomics

Comments made at the public hearings on the Draft EIS indicate that some area residents are especially concerned about the prospect of emissions from a land disposal facility. To the extent that these comments reflect public sentiment, development of a "high technology" facility could reduce the residents' concerns. On the other hand, the prospect of a facility which handles such "publicly sensitive" wastes as PCBs and which could emit dioxins and furans could create new concerns, offsetting any advantage of the high technology approach in terms of public acceptability.

Unavoidable Adverse Impacts

Unavoidable adverse impacts associated with a "high technology" facility would generally be the same as those described in the Draft EIS. As noted in the preceding discussion, absence of a landfarm and a smaller landfill could decrease some of the potential adverse impacts, but the decrease would not be expected to be significant. There could be some differences in unavoidable air quality impacts, as described in Section IV.

Irreversible and Irretrievable Commitment of Resources

The resources most affected by differences between a "low technology" and a "high technology" facility are water and energy. The following discussion summarizes a longer discussion in Section IV.

Water. The "high technology" facility could require up to 150 gallons of water per minute (averaged over a 24-hour period), whereas a "low technology" facility could use about 35 gallons per minute. The most likely sources of this water are ground water and water reclaimed from facility operations. The capital costs of supplying water could be higher for the "high technology" facility, thus consuming additional economic resources as well as water resources.

Energy. Use of electricity would be higher at the "high technology" facility than at the "low technology" one. The incinerator would draw a peak energy load of up to 450 kw (kilowatts). The energy needs of other facility operations could require an additional 200 to 250 kw (3). The "low technology" facility would draw a peak load of approximately 200 kw (7). Co-generation of electricity using excess heat from the incinerator could meet some of the "high technology" facility's energy needs.

Motor fuel consumption could decrease if the incinerator facility were developed, since trucks carrying PCBs to the facility would travel a shorter distance than they would if they had to continue on to existing incinerators in Arkansas and Texas. Estimates of anticipated PCB shipments to the proposed incinerator indicate that gas savings could range from about 138,000 to 155,000 gallons per year. (See Appendix C.)

Short-term Use Versus Long-term Productivity

The relationship between short-term use of the site and long-term productivity of the affected environment would be similar to that described in the Draft EIS. (See DEIS pp. 4-50 to 4-52.) Any potential long-term health risks due to emissions from the incinerator would be assessed through a risk assessment conducted as part of the facility permitting process.

SECTION IV

MAJOR ENVIRONMENTAL ISSUES

ALTERNATIVES

Alternative Sites

The Draft EIS considers three alternative sites for the proposed facility: the Mobile area (Rainbow Valley), the Western Harquahala Plain, and the Ranegras Plain. These were the three areas recommended by ADHS to the State Legislature for its consideration in selecting a final site. ADHS's recommendation was the result of its siting study, described in "Final Report to the Arizona State Legislature Regarding Siting of a Statewide Hazardous Waste Disposal Facility," January 1981.

Some commenters suggested alternatives other than those considered in the Draft EIS. (See Section VI.) Specific suggestions were:

- a location that is a minimum of 30 miles from any humans residences;
- a location where there is no ground water beneath the site;
- Luke Air Force Gunnery Range.

In its evaluation of potential sites, ADHS weighed many factors influencing selection of a site. Remoteness from residents was one such factor. It was, however, weighed against other factors, such as:

- distance from the sources of hazardous waste (for safety and economic considerations related to transportation of the waste), and
- the cost of developing the facility, including the cost of developing roads and utilities and of attracting the professional staff needed to operate the facility.

Also, many extremely remote areas are game ranges, military preserves, or reservations where the acquisition of land for a facility would be difficult or impossible. The difficulty in acquiring federal military land, for example, was one reason ADHS did not recommend or study sites on Luke Air Force Range.

ADHS excluded from consideration large areas of the State because of geologic conditions which might make construction or monitoring of the facility difficult. These exclusions, in addition to other exclusions discussed below, focused the siting study on valleys and plains where ground water is generally present. The key ground water criterion was its depth, 150 feet being the minimum depth considered. The deeper the ground water, the higher ADHS rated the siting area.

Since ADHS has already conducted a comprehensive siting study which has been incorporated by reference into this EIS, there is no need for further analysis of sites in this document. To facilitate understanding of how the State arrived at its recommended sites, however, the process and criteria used by ADHS in evaluating potential sites are summarized here.

ADHS conducted a three-step site screening process through which it arrived at the three sites recommended to the Legislature. Each step involved a different level of analysis, including a variety of environmental, economic, social, and institutional criteria.

The Legislature set certain criteria in its bill mandating the study (SB 1283, ARS 36-2800). The site could not be located within:

- a 100-year floodplain;
- an area so close to public roads, residences, public and private water wells and water supplies as to constitute a threat to human health or the environment;
- an area where depth to ground water is less than 150 feet within one mile of the site;
- an area where the surrounding land use may impede the long-term maintenance of the site;
- an area where the hydrology and geology would be incompatible with a hazardous waste facility;
- an area where subsidence has occurred or is likely to occur.

The Legislature also directed that transportation distances and routings from those areas in the State which are major sources of hazardous waste be factors in determining site location. In addition, ADHS used other criteria obtained from state and Federal regulations and from guidance documents and reports prepared by other agencies.

Level One Screening

ADHS's first step was to exclude areas of the state which would not be suitable for a hazardous waste facility site. The initial review excluded areas for the following reasons:

- Geology is unsuitable, based on the need to be able to predict pollutant movement beneath the site in case of a release at the facility. This excluded areas where fissures or faults in the subsurface might become routes through which released contaminants could rapidly enter ground water. It also exluded areas where shallow bedrock or rock outcrops could make monitoring difficult and costly.

- Subsidence has occurred or is occurring.

- Hydrology is unsuitable. Using existing maps, ADHS identified areas where ground water is less than 100 feet deep. Subsequent analysis of the remaining areas identified those meeting the Legislature's requirement that ground water be at least 150 feet deep.

- Development of a hazardous waste facility would be excluded by law. This includes national parks, national monuments, national recreation areas, wildlife refuges, and state parks.

- Acquisition would be extremely difficult or time-consuming. Areas such as Defense Department lands, national forests, and Indian reservations were not considered feasible because of the difficulty of obtaining purchase or exchange agreements.

Level Two Screening

Land not excluded in the Level One screening was divided into a number of specific siting areas for further analysis. In this step, additional criteria were applied to exclude unsuitable areas from further consideration. Areas were excluded on the basis of the following criteria:

- Existing or projected land use is inconsistent with the operation of a hazardous waste facility.

- The areas are not within a reasonable transportation distance from hazardous waste generators (defined as 150 miles from Phoenix, source of 75% of the State's hazardous waste).

- The areas have a high potential to be affected by subsidence.

- The areas have a high potential for faulting, fissuring, seismic activity, or other undesirable geologic activity.

Level Three Analysis

Ten siting areas remained after the screening process was completed. These were subjected to a comparative evaluation using the following criteria:

Economic criteria

- cost of land acquisition
- cost of facility development, including roads, utilities, and protection of the facility from floods and other natural hazards
- cost of operation, primarily employee salaries and monitoring costs

Social criteria

- health and safety impacts of transportation to the site, based on distance from the sources of wastes, mileage on limited access highways, number of communities on the routes, and number of people living along the routes
- degree to which location minimizes waste import risks
- health and safety impacts from operation of the facility, measured in terms of projected population within 5 and 10 miles of the site
- potential nuisances to nearby communities from transportation to or operation of the facility
- potential scenic or aesthetic impacts of the facility
- archeological or historical impacts of the facility

Institutional criteria

- surrounding land use within 10 miles of the site
- land ownership
- surrounding water uses

Environmental criteria

- depth to ground water

- quality of ground water
- annual precipitation
- annual pan evaporation
- annual sunshine
- wind impacts
- characteristics of soils underlying the site
- characteristics of biological communities in the area
- presence of threatened or endangered species of plants and animals in the surrounding area

Based on the comparison of the ten sites using these criteria, ADHS recommended selection of the Western Harquahala Plain site. In its report to the Legislature, however, ADHS also stated that the Rainbow Valley and Ranegras Plain sites were worthy of consideration.

Resource Recovery and Waste Reduction

Several comments on the Draft EIS addressed the possibility of recycling hazardous wastes or eliminating the generation of waste that must be disposed of. In response to these comments, the following discussion has been prepared to supplement the section of the Draft EIS which deals with recovery/recycling (DEIS p. 2-5).

With the implementation of stringent State and Federal regulations, the cost of hazardous waste management has increased substantially. The high disposal costs have forced manufacturers to evaluate and redesign their processes in order to minimize waste generation and disposal costs. This trend is expected to continue with future refinement of the regulations.

One objective of the State and Federal hazardous waste programs is to encourage resource recovery and minimize the generation and disposal of hazardous wastes. As part of this effort, ADHS has been working with the Arizona Chamber of Commerce in an attempt to establish a Waste Exchange Program. Since one person's waste may become another person's raw material, the function of the Waste Exchange Program is simply to bring together generators and potential users of wastes, thereby minimizing or eliminating the need to dispose of certain wastes. The program is presently under development, and it is not certain when or whether the program will be implemented. If implemented, the Waste Exchange Program could impact the proposed facility by bringing about a change in the types and amounts of wastes shipped to the facility. The extent of the impact cannot be determined at this time.

The success of waste reduction efforts depends on the economic feasibility of recovery or reduction and other considerations. Certain of the wastes generated within Arizona are not recoverable, either by law or because large-scale technologies do not exist. These include pesticides, asbestos, and certain of the extremely hazardous wastes. The technology for recovering metal values from wastewater is readily available, but the economic viability of metal recovery is a function of concentration (which is as yet undetermined in the case of the proposed Arizona facility). Sludges typically contain recoverable metals currently valued at $44 per ton of received sludge.* Recovery of these metals by electrolysis and roasting would cost over $400 per ton. While many smelters routinely process ores worth (in terms of recoverable metals) a quarter of the value of the sludge, their large scale of operation justifies the exploitation of low-value ores. The proposed hazardous waste facility would be processing only about 1.7 tons (dry weight) per day.

For those wastes which can be recovered, the proposed facility could include resource recovery operations. The representative design described in Appendix D of the Draft EIS includes a solvent recovery system. Other systems could be implemented if economically justifiable, but none appear to be economically feasible at this time. Consequently, the need for disposal and treatment capacity should continue to exist in the foreseeable future.

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* These figures are based on 1982 dollars and 1982 metal values.

PHYSICAL SETTING

Seismology

This discussion of the recent seismic history of Maricopa and Yuma Counties uses the Modified Mercalli scale.* Appendix E reproduces the explanation of this scale which appears in Bulletin 193 of the Arizona Bureau of Geology and Mineral Technology (8).

In Maricopa County, in which the Mobile site lies, 23 earthquakes were recorded between 1875 and 1974 (the period for which data are available). These earthquakes ranged in maximum intensity from II to X on the Modified Mercalli scale (8). The three most intense earthquakes recorded originated in California (VII and X) and in Mexico (X). The most intense recorded earthquake which actually occurred (i. e., the epicenter was located) in the County was ranked VI.

La Paz County, in which the alternative sites lie, was created in January of 1983 from what had been the northern part of Yuma County. Between 1872 and 1977, 112 earthquakes were recorded in Yuma County. Of the ones which centered in Yuma County, all but one ranged in intensity from II to VI on the Modified Mercalli scale (8). The 1872 earthquake is estimated to have been one which would be ranked VII on this scale, but this kind of estimate is open to question, as it is based on historical evidence such as letters, newspaper accounts, and local histories (8). Sytematic earthquake reporting did not begin in the area until 1910.

Over 70% of the earthquakes which have been recorded in both Yuma and Maricopa Counties have been centered outside the State of Arizona, commonly in California or Mexico (8). No earthquakes ranked over VII have occurred in either county.

Federal regulations prohibit the siting of a hazardous waste facility within 200 feet of a fault (See Section V). If the facility were located at either of the two sites in La Paz County, the operator would have to show in the hazardous waste permit application that the facility meets this standard. This would require geophysical and subsurface explorations during the facility design phase. Because the seismic conditions in

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* The Mercalli scale is used here for convenience in discussing the seismic history of these two counties. EPA's seismic location standard is based on the presence near a facility of any fault active within recent geologic (Holocene) time without regard to the magnitude of earthquakes experienced.

Maricopa County are different, the operator of a facility at the Mobile site would not be required to demonstrate in the permit application that the site meets the standard. For further information on this requirement, see Section V.

Subsidence

Land subsidence in Arizona is usually associated with excessive ground water pumpage. Subsidence, the physical depression of the earth's crust, may result in the development of fissures and cracks as well as changes in the slope of the ground surface. Subsidence can result in the accelerated erosion of drainage ways.

Some evidence exists that subsidence has occurred in parts of Rainbow Valley near Heaton (9). These areas, however, are 13 to 14 miles from the proposed site, and are located in the eastern side of the Valley where ground water pumpage has historically been greater than in the area around the site (see Appendix F in the Draft EIS).

The Mobile area is within the Phoenix Active Management Area (AMA), designated under the provisions of the State's Water Management Act in order to provide for better management of ground water resources. The State Department of Water Resources (DWR) is currently preparing a plan for the Phoenix AMA which, when completed in early 1984, will identify issues related to ground water management in the area. DWR will then develop guidelines for addressing issues identified in the plan. Issues examined will include subsidence problems. The hazardous waste facility's ground water permit could include provisions designed to address subsidence if a subsidence problem is identified in the Mobile area.

If a potential subsidence problem is identified, the facility may also be required to develop a plan for handling any emergencies caused by subsidence at the facility (such as damage to a landfill cell or surface impoundment liner). This would be part of the contingency plan required in the facility's hazardous waste permits issued by EPA and ADHS (see Section V).

GROUND WATER

Ground water data for the specific parcels identified as potential sites are very limited at this time. Consequently, the EIS assesses ground water impacts using regional data from U. S. Geological Survey studies and other available sources. This assessment should should not be interpreted to be a conclusive analysis of ground water conditions at the sites. Rather, it is an overview of regional conditions which indicate possible or likely conditions at the sites and suggest factors which should be considered in developing and permitting a facility.

This assessment includes a discussion of the travel time that might be required for ground water to move from each site to the nearest existing off-site water supply wells. The Draft EIS estimates it would take ground water 270 to 370 years to travel from the Mobile site to the nearest existing wells, while it would take an estimated 2,700 to 11,000 years at the Western Harquahala Plain site, and 2,250 to 6,750 years at the Ranegras Plain site.

Some readers interpreted these numbers to mean the time it would take contaminants to reach ground water from the surface. This is not the case. They indicate a range of travel times which might be involved after contaminants had already entered ground water. The Draft EIS states (DEIS p. 4-4) that "given the substantial depth to ground water, it would likely take decades for even a large release of contaminants to reach the water table after leaking from the facility." This would be in addition to the time it would take contaminants to travel to the nearest existing wells. A more definite estimate of the time it would take for contaminants to reach ground water was not made because there is insufficient information about the subsurface at the sites and about specific constituents of the hazardous waste and how they would behave in the subsurface soils.

Several readers correctly commented that contaminants from hazardous waste may travel at rates different from those presented for ground water. Some may travel faster than ground water, others slower. It should be clarified that the figures presented in the Draft EIS are estimates for ground water, not for hazardous constituents. While there is not a direct correlation between ground water movement and the movement of hazardous constituents, the travel times do provide a general indication of particle movement which is useful in comparing the three sites for the purpose of site selection.

The statement in the Draft EIS that "the concentrations of contaminants would likely be very low by the time the contaminated water reached the nearest wells" (DEIS p. 4-5) also generated comments from readers. We agree this may be an overstatement since it is couched in such general terms. However, experience at uncontrolled hazardous waste sites in semi-arid environments has shown that some contaminants are removed and/or retarded in the unsaturated zone, and that some dilution does take place for some contaminants, when a plume of contamination travels over a distance of several miles.

Prevention and Control of Ground Water Contamination

Several commenters expressed concern over various ways in which ground water contamination might occur, such as the interaction of liquid wastes and the soils into which they are placed, release of contaminants into wells, or contamination of shallow ground water downstream from the facility. In this document, it is not possible to make reasonable predictions about the chance that ground water contamination could occur through any particular set of circumstances. The kind of information needed to make such assessments, such as how the facility is to be designed and how particular wastes would be situated with regard to potential contamination routes, would be available at the time the facility operator applies for the permit to build and operate. Such concerns would be addressed in the permit process.

The following discussion identifies how the permit could address the potential ground water problems which have been raised in comments on the Draft EIS. As the discussion of the permitting process in Section V notes, the public would have an opportunity to review and comment on these and other conditions contained in the draft permit.

Release of Contaminants into the Subsurface Soil

Some readers are concerned that wastes could be released through interaction with the soils and would move quickly through the subsurface soils into ground water. While liquid wastes or leachate coming into direct contact with the soil could move downward into the ground water, the rate of movement would depend on the particular soils and geology beneath the facility and on the specific substances in the liquid or leachate.*

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* Leachate is a liquid which percolates through the waste and combines with water-soluble waste constituents. Leachate will travel down through the soil and enter ground water if it exceeds the capacity of the soil to absorb it.

To minimize the possiblity of such an event occurring, Federal and State regulations focus on keeping hazardous constituents out of the subsurface soil. This is accomplished through several provisions in the regulations, including the following major requirements.

Use of liners and monitoring/detection systems. All new waste piles, surface impoundments, and landfills must have liners that are designed and installed to prevent any migration of wastes out of the unit to the adjacent subsurface soil or to ground water or surface water thoughout the active life of the unit.* Since it is recognized that eventually any liner may leak or be damaged, a detection system is required to monitor for leaks or for the release of hazardous constituents into the ground water. The regulations provide for two main options in meeting this requirement: a single liner with a ground water monitoring system, or a double liner with a leak detection system.

If a single liner were to be used, then a ground water monitoring system would have to be established to determine whether any hazardous constituents have leaked or leached out of the facility and entered ground water. Monitoring wells would be placed around the perimeter of the treatment, storage, and disposal units (i.e., the boundary of the "waste management area"). If monitoring indicated that contaminants had entered the ground water, the facility operator would have to determine whether contaminants were exceeding a standard set to protect public health and the environment. If any contaminants did exceed that standard, the facility operator would have to take "corrective action" to clean up the ground water and prevent further contamination.

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* Federal regulations exempt a facility from this requirement if the facility owner or operator can show that alternative design and operating practices, together with location and waste characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water forever. Such a showing would involve extensive analysis of the the subsurface geology, the nature of the ground water beneath the site, the nature of the waste handled at the facility, and other considerations. Given what is currently known about ground water and the subsurface in the areas around site considered in this EIS, the expense of conducting such an analysis, and uncertainties involved in making such predictions, this option is not considered a viable one for the proposed Arizona facility. Should the operator attempt to make such a showing, however, the public would have an opportunity to review and comment on it as part of the permit review process.

In the double liner option, a leak detection system is placed between two liners to determine whether the top liner is leaking. The second liner would contain any liquid that had leaked through the top liner. If a leak were detected, the operator would have two choices: repair the leak in the liner, or allow the leak to remain unrepaired but put into place a ground water monitoring system. Under the latter option, any hazardous constituents that continued to leak through the unrepaired liner would be detected if they entered ground water. Corrective action would then be required if hazardous constituents were present in amounts or concentrations harmful to human health or the environment.

Because it provides for detection of leaks before hazardous constituents have entered the subsurface, thus allowing time to repair the leak, the double liner option exempts the facility from the requirement to have ground water monitoring (unless, as noted above, the operator opts for monitoring after a leak has been detected in the top liner). The double lines option, then, is considered to be as effective in protecting human health as the single liner option with ground water monitoring.

The Draft EIS suggests that the double liner/leak detection design might be more appropriate than the single liner/ground water monitoring design at the particular sites considered for the Arizona facility (DEIS p. 4-7). Because of the substantial depth to ground water and the normally low moisture content of the desert soils, it could be many decades before a ground water monitoring system could detect a leak. Leak detection directly under the liners would mean faster identification of potential problems.

While use of the double liner/leak detection system should be considered by the facility contractor in designing the facility, this statement should not be construed as a requirement that the contractor adopt this particular system. Final determination of the liner design would be made by the contractor based on a variety of factors considered in the overall design of the facility. Since this would be part of the permit application, it would be subject to agency and public review during the permit process.

Use of leachate collection/removal systems. For landfills and piles, liners (single or double) are to be used in conjunction with a leachate collection and removal system. Such a system would help minimize the possibility that leachate would pass through the liners and enter the subsurface. The system would collect any liquids draining through the treatment, storage, or disposal unit so they can be safely removed.

Surface impoundments are not required to have a leachate collection and removal system because of the large amounts of liquids that are regularly placed in them. To minimize the formation of leachate, liquid wastes in impoundments must be either removed or solidified before the unit may be closed. If the waste is not removed, the impoundment must be covered (capped) to prevent rainfall or other liquids from entering the impoundment after it has been closed.

Controls on the placement of liquids into landfills. Two provisions of the regulations are intended to minimize placement into landfills of liquids would could leak or seep through the liner. First, liquid wastes (those not in containers) may be placed only into a landfill with a liner system that will prevent the migration of wastes into the subsurface. That is, no liquids may be placed into a landfill which is exempt from the liner requirements unless the wastes have been treated or stabilized, chemically or physically, so that free liquids are no longer present.*

Containers holding liquids cannot be placed into a landfill (even a lined one) unless all free-standing liquids have been removed or absorbed or solidified, so that no free-standing liquid can be observed. Excepted from this rule are containers which are very small (such as an ampule) or which are designed to hold liquids for use other than storage (such as a battery or capacitor).

Capping disposal units at closure. Disposal units, in which wastes will be left permanently in place, must be covered or "capped" when the unit is closed to prevent rainfall or other liquids from entering the unit and forming leachate.† The cover must be maintained for the entire "post-closure" period, normally 30 years.** While the liner is the primary means of keeping hazardous constituents out of the subsurface during the active life of the facility, the cover is the main method of protecting the subsurface after closure by minimizing the formation of leachate within the disposal unit.

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* The exemption from the liner requirement is discuss in the footnote on p. IV-11.

† Units used only for treatment or storage are not covered because, at closure, all the wastes and waste residues must be removed and disposed of in a disposal unit, leaving no wastes to leach into the soil.

**The "post closure" period, during which the facility owner or operator must maintain the unit covers and continue monitoring, may differ from the normal 30 years under certain conditions. For example, the occurrence of leaks or other problems could cause the period to be extended.

Placement of wastes. The regulations include restrictions on the placement of wastes which are ignitable, reactive, or incompatible. The purpose of these restrictions is not only to avoid accidents (such as explosions or fires), but also to protect the integrity of liners and other structural design features which keep wastes from migrating out of the treatment, storage, or disposal units.

Release of Contaminants into Wells, Holes, or Other Openings in the Soil

Some commenters raised the possibility that contaminants could enter ground water through wells at or near the facility. The most likely wells to become routes of contamination would be those nearest the units which handle the wastes, that is, monitoring wells at the perimeter of the waste management area and water supply wells on the facility grounds.

Ground water monitoring wells must be placed at the edge of the waste treatment, storage, or disposal units, rather than within the units or their structure (e. g., the dikes forming impoundments). This is to avoid the possibility that the well shafts would become a direct route for contamination or could threaten the integrity of the unit (e. g., by weakening the dikes). Wells at the perimeter must be constructed to avoid contamination of the aquifer, through means such as sealing the space around the well casing above the area where samples are to be drawn (these measures also protect the samples from contamination).

Placement of water supply wells at the facility is not addressed in the regulations. The permit application, however, would show the location of the supply wells in relation to the treatment, storage, and disposal units. Any potential problems with well placement would be addressed by the permit writer and the applicant. Good engineering practice suggests that the wells be placed upgradient (with respect to ground water) of the areas where wastes are handled, that they be placed so that no surface run-off from the active units flows toward the wells, and that they be placed away from areas where trucks carrying waste loads might spill wastes into them. Sealing the casings could also help avoid contamination.

Wells, holes, fissures, or other openings in the surface on property outside the facility could become routes for contamination of ground water if run-off from the treatment, storage, or disposal units flowed towards them. To prevent this, facility owners and operators are required to divert run-on (such as storm water flowing onto the facility) away from these units, and to contain run-off (liquids flowing out of the units) through the use of containment dikes or other methods. The federal regulations require that, for waste piles and landfills, the run-off containment system be capable of containing the volume of at least a 24-hour, 25-year storm. For surface impoundments, the regulations do not specify a storm level, but require that the impoundments be designed, constructed, maintained, and operated to prevent overtopping. The 24-hour, 100-year storm is recommended as a guideline, however, since this is the most extreme (i.e., "worst case") event for which data are readily available.

As the Draft EIS notes, the Mobile site appears to be subject to intense storm water run-off from the surrounding watershed. For that reason, ADHS has agreed to use the 100-year storm as the standard for designing all run-on diversion and run-off containment systems rather than the 25-year storm. According to EPA estimates based on national statistics, use of the 100-year standard rather than the 25-year standard could increase costs to the facility operator by up to 25 percent (10).

Release of Contaminants into Shallow Ground Water

Some residents of the Rainbow Valley area have commented that ground water can be found at very shallow depths of 10 to 40 feet at certain places in the Valley. They are concerned that contaminants might be spread to soils in these areas through storm water run-off from the facility or the settling out of airborne contaminants. Their concern appears to be that surface contamination could enter ground water through naturally-occurring "recharge" of the aquifer in these areas of shallow ground water.

Depth to ground water in the Waterman Wash/Rainbow Valley area (as of spring, 1982) varies from greater than 400 feet in the southern part of the basin (near the site) to approximately 100 feet in the extreme northwest part of the basin (11). Ground water flow from both areas is toward a large cone of depression just southeast of the 100-foot zone (See DEIS p. 3-8).

Twenty miles directly northwest of the proposed site is an area within the Gila River recharge zone where the depth to water is within several feet of the surface. This shallow depth is due to recharge from upstream dam releases and irrigation return flows. This basin is separate from the Waterman Wash/Rainbow Valley ground water basis (i.e., ground water from one basin does not flow into the other).

Storm water run-off from the facility or flood waters passing through the facility, if uncontrolled, could carry contaminants to natural recharge areas along Waterman Wash or the Gila River. In that event, contamination of ground water through recharge would be of concern if the concentration of contaminants were significant. This can be prevented by designing and operating the facility to control run-off and prevent washout from floods (see previous discussion and Section IV, Surface Water).

Settling out of airborne contaminants is not expected to pose a problem. Winds strong enough to carry airborne particles 20 to 25 miles from the facility to the shallower wells in the Gila River area would substantially dilute any pollutants carried by the winds.

Contamination from Land Treatment Units

As the Draft EIS notes, land treatment or "landfarming" is one of the methods through which the facility could treat biodegradable organic wastes or wastes which can be "immobilized" within surface soils. In landfarming, wastes are tilled or injected into top soils where microorganisms in the soil can act upon them, degrading waste substances into non-hazardous materials. Alternatively, the wastes may react with the soils to remain stable or immobile.

Because of the size and nature of such operations, liners and leachate collection systems are not practical means for ensuring that hazardous constituents do not migrate to ground water. Instead, operating and monitoring requirements provide for protection of ground water. These include the following measures:

- The operator must demonstrate that land treated wastes will be adequately degraded or immobilized within the "treatment zone," the top layer of soil (no deeper than five feet) in which action on the wastes occurs. The demonstration is made to ensure that each waste handled in the landfarm can be treated such that hazardous constituents are not expected to emerge from the treatment zone.

- Ground water must be monitored unless the facility operator can show that there is no chance that wastes would enter ground water or pose a threat to human health or the environment. As with other types of treatment, storage, and disposal units, ground water monitoring of a land treatment unit would detect the presence of contaminants in the ground water. If detected, the amount of contamination would be determined and any necessary corrective actions would be taken.

- Unsaturated zone monitoring is required to detect the presence of hazardous constituents between the treatment zone and the ground water aquifer. This type of monitoring, which would take place directly below the treatment zone, would provide feedback on the success of treatment in the treatment zone. Information obtained would be used to adjust the operating conditions at the unit in order to maximize degradation, transformation, or immobilization of hazardous constituents in the treatment zone.

It should be emphasized that unsaturated zone monitoring is not a substitute for ground water monitoring. Both are required at land treatment units. Ground water monitoring is designed to determine the effect of hazardous waste leachate on the ground water. Unsaturated zone monitoring generally cannot perform that function. Instead, unsaturated zone monitoring simply gives an indication of whether hazardous constituents are migrating out of the treatment zone.

Hydrogeologic Data

Several readers commented on the insufficiency of the regional ground water data used in preparing the Draft EIS. Some noted that regional data could not be used to estimate adequately the time it would take surface contamination to reach ground water and existing wells, or to design a ground water monitoring program. Commenters also noted that regional ground water conditions are likely to change over time, and could be altered by water supply pumping at the facility itself. Additional information was requested on the types of hydrogeologic data which the facility operator (or other parties) would be required to obtain in order to design the ground water monitoring program.

EPA recognizes the limited nature of the ground water data used in preparing the Draft EIS, and is not implying that such data are sufficient to understand hydrogeologic conditions at the sites for the purpose of designing either the facility or a ground water monitoring program. Regional data have been used because they are the only data available at this time and are sufficient to provide a comparison of the range of likely ground water conditions at the three sites in order to make a site selection. It is also recognized that ground water conditions may change over time, but it is not useful to speculate how they might change without having a variety of data which are not currently available (such as specific information about supply wells to be located at the facility: location, pump rates, etc.).

The additional ground water data that would be required during the design and permitting processes depend a great deal on features the permit applicant chooses to incorporate into the facility design. A great deal of information would be needed to design a ground water monitoring program. Under the Federal regulations, however, it is possible that ground water monitoring would not be required; e.g., where all units have a double liner with leak detection. To be exempt from the ground water monitoring requirements, the facility owner or operator would have to include with the facility permit application an engineering report explaining the location of the saturated zone in relation to the double-lined units. The information obtained for this showing would not necessarily be as extensive as that obtained for a ground water monitoring program.

The operator could choose the single liner option, or ADHS could require ground water monitoring in addition to the use of double liners and leak detection.* In this case, the operator would have to study carefully the hydrogeologic setting in order to place the ground water monitoring wells properly. It would be necessary to determine parameters such as ground water depth and the rate and direction of ground water flow. Through logs of the well hole drillings, the geology of the subsurface could be studied to determine soil types, indications of the presence of faults, etc.

If ground water monitoring is implemented, the direction and rate of ground water flow must be checked at least annually. This is because the occurrence of a leak or a leachate problem is determined by comparing the levels of hazardous constituents downgradient of the treatment, storage, and disposal units with their levels upgradient of the units. Consequently, it is vital that the proper location of wells with respect to ground water flow be determined. If the sampling indicates a change in the ground water conditions (e.g., a change in ground water flow rate or direction caused by new wells in the vicinity), the monitoring program must be changed to meet the permit requirements. Consequently, if ground water monitoring is required, regional ground water changes would be identified and taken into account.

Another option in the regulations allows a permit applicant to be exempt from ground water monitoring if the applicant can show that, because of an extremely favorable hydrogeologic setting, hazardous constituents would never enter ground water. Since much of the data needed for such a demonstration may be subject to scientific uncertainties, the regulations require that an applicant for the exemption use assumptions which tend to maximize the estimated rate of leaching, that is, the "worst case." Data and assumptions that would likely be required in order to obtain such an exemption include the following:

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* In this case, optional use of ground water monitoring could be subject to negotiations between ADHS and the facility contractor, when the contractor is selected.

- The thickness or depth of soil underlying the regulated unit should be determined. This factor can be determined directly by soil core borings. If soil depth estimates are used in the prediction, however, the minimum value in the range of depth estimates should be selected.

- The calculation of travel time should be based only on natural soil properties, ignoring the effects of synthetic or recompacted natural soil liners placed beneath the waste.

- The prediction should be based on the travel time of the most dense and/or least viscous fluid in the regulated unit (i.e., the fluid with the lowest kinematic viscosity). For example, some solvents are less viscous than water and thus are likely to move faster than water.

- Since the depth of liquids or leachate in a unit can vary, the prediction should assume that the unit is full of liquids (i.e., the maximum possible hydraulic head).

- The owner or operator should account for the effective porosity of the soil when making a prediction. Estimates of effective porosity are difficult to make. For this reason, EPA believes that 10% effective porosity, a low value, should be used to avoid the uncertainty involved in estimating effective porosity and to ensure relatively short travel time predictions for the soil beneath the regulated unit.

- Soil attenuation mechanisms should be ignored in travel time predictions.

As another measure to increase confidence in a prediction made to qualify for this exemption, EPA has required that the owner or operator's demonstration must be certified by a qualified geologist or geotechnical engineer.

Relationship Between Ground Water Data, Protective Measures, and the Facility Permit

Some commenters wrote in support of specific ground water protection measures, such as leak detection plus ground water monitoring or monitoring below the second liner of the landfill (in addition to leak detection between the liners). Both these comments and those suggesting the need for additional data on ground water conditions at the sites are valuable. EPA feels, however, that it is not appropriate to commit the facility contractor (who has yet to be selected) to any specific ground water protection measures or ground water data requirements at this time for the following reasons:

- Ground water measures must be tailored to the specific design of the facility, which has not yet been developed.
- Federal and State regulations allow the facility operator certain flexibilities in achieving the environmental and health-related goals of the hazardous waste management program. For example, although the Draft EIS points out that conditions at the site suggest that double liners with a leak detection system would be a desirable design feature, the facility developer would be allowed, under these regulations, to propose the single liner/ground water monitoring option in the permit application.
- The design to be submitted with the permit application would depend to a certain extent on the outcome of negotiations between ADHS and the facility contractor.
- Specific design, monitoring, and data requirements would be fully addressed in the permit process. Since the permit process is the "functional equivalent" of an EIS on the facility design, it is not necessary to present information or speculate about permit features at the "site selection" phase.*

Consequently, EPA has determined that further data needs and the commitment to specific ground water protection measures should be left to the permit stage rather than presented in this EIS.† The public would have an opportunity to review the permit conditions and the pertinent ground water data during the permitting process.

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* See Appendix A, p. A-12, of the Draft EIS for a discussion of EPA permits and the Federal EIS requirements.

† ADHS has prepared its own list of studies which Department staff believe may be needed to adequately design the facility. This list appears here in Appendix F.

SURFACE WATER

Several commenters expressed concern over potential flooding problems at the Mobile site. Several issues are raised in these comments:

- The threat to the Central Arizona Project canal and to stock ponds.
- Alternatives to the use of surface impoundments (ponds) containing uncovered liquid wastes.
- Assurance that flood protection measures would be adequate.
- Consideration of the difficulties that flooding potential poses for the design and operation of a facility at the Mobile site.

Threat to the CAP Canal and to Stock Ponds

One commenter suggested a flood at the Mobile site could wash contaminants into the Central Arizona Project canal and consequently threaten the water supply of Tucson. The Mobile site is 25 to 30 miles south of the CAP canal. The watershed at the site drains into Waterman Wash, which empties into the Gila River several miles south of the canal. Since floodwaters from the site would drain into the Gila River near Buckeye, the canal would not be affected by such flooding. The facility would pose no hazard, then, to Tucson's drinking water supply. (For a discussion of the impacts of a flood at the Mobile site, see DEIS p. 4-8.)

Stock ponds currently exist at the Ranegras Plain site and near the Mobile site. A stock pen also lies near the Western Harquahala Plain site, although at the time of this writing its water is contained in a metal tank rather than a pond. Nonetheless, surface waters could collect in low areas during a heavy rain and would be accessible to cattle in the area.

The chance of sheet flooding washing spilled chemicals into these ponds is small for several reasons. There is only a low probability of a spill during either the transport of waste or operation of the facility (e.g., during transfer of waste from trucks to facility units). Since the annual amount of rainfall is low in these areas, the probability of a spill during or just before a rainstorm is significantly lower still. The permit conditions could further minimize this possibility by requiring special operating procedures at the facility during stormy weather (especially during the months of heaviest rain--July, August, and September). For example, the facility's "contingency" plan, required as part of its permit, could establish that under certain weather conditions likely to produce heavy rainfall, operations susceptible to spills should be restricted. The plan would establish spill response procedures; prompt clean-up of spills would reduce the possibility that sheet flow could come into contact with contaminants.

Alternatives to Surface Impoundments

Surface impoundments (ponds) are of concern because they would hold large amounts of liquid wastes and could overflow if an excessive amount of rainwater fell directly into them.* Flood waters could also potentially breach the berms forming the impoundment and cause massive release of wastes.

Impoundments are an economical means of handling large amounts of liquid wastes for certain purposes. In the Arizona desert, use of evaporation ponds could be a highly effective way to reduce the water content of some wastes to form a sludge that could be readily landfilled or landfarmed. Acid or alkaline wastes could also be neutralized in large quantities.

Alternatives to surface impoundments, such as covered tanks, could be viable for some operations. However, these would likely be much more expensive than impoundments. The facility operator would have the option of using such an alternative in designing the facility. Given the advantages of using impoundments to store and treat a variety of bulk liquid wastes in an economical manner, though, it is not likely the operator would choose to avoid impoundments completely in favor of more costly methods. Also, tanks would not be viable for reducing the volume of wastes because of the large surface area required in solar evaporation techniques. The question then becomes one of assuring that surface impoundments, as well as other parts of the facility, are adequately protected. This question would be addressed through the permit, as described below and in Section V.

Adequacy of Flood Protection Measures

Two sets of standards in the federal regulations for hazardous waste facilities deal with problems related to storms and flood waters: a floodplain location standard, and run-on/run-off controls.

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* Surface impoundments are not normally covered because of their size and function and the nature of the wastes placed in them.

Floodplain Location Standard

Federal regulations require that a hazardous waste facility located within a 100-year floodplain be designed to withstand the 100-year flood (see Section V). Floodplain maps for the Ranegras Plain and Western Harquahala Plain sites show both sites well outside the 100-year floodplain in that area. Consequently, a facility located at either of these sites would not be subject to the 100-year flood protection requirements. The facility would, however, be subject to the run-on and run-off controls discussed below.

Floodplains in the vicinity of the Mobile site have not been delineated. Before a permit could be issued to build and operate a facility at that site, the 100-year floodplain would have to be identified. There are significant technical problems in doing this, however, due to the nature of drainage patterns in the area. Generally, floodplains exist around well-defined, relatively fixed stream or river beds. When the water level rises above the banks, the overflow follows an identifiable flooding pattern based on the amount of overflow and the topography of the surrounding area. In the case of the Mobile site, however, numerous channels or washes cross the area. Stormwater is likely to flow over a wide area, at a low depth but at a high velocity. Under these conditions, the shallow channels may be frequently changed by the stormwaters flowing over the alluvial plain. (The fact that vegetation is sparse is another factor inhibiting the formation of permanent drainage channels.) Although some of the washes crossing the site are relatively well-defined, the changing nature of the overall drainage pattern makes it very difficult to identify a floodplain. EPA and ADHS are working to determine a suitable method of analyzing the floodplain so that the facility's compliance with the floodplain location standard can be determined during the permitting process.

Run-on/Run-off Controls

Federal and State regulations also require that hazardous waste facilities be designed to prevent storm waters from running onto active treatment, storage, or disposal units (run-on) and to prevent waters which have collected in these units from flowing out into the environment (run-off). Under the Federal regulations, run-on controls for land treatment units, waste piles, and landfills must protect against the peak flow of at least a 25-year storm. Run-off controls for these units must at least contain the run-off volume from a 24-hour, 25-year storm. Surface impoundments must be designed to prevent "overtopping" from rainfall, run-on, and other causes; though no storm standard is set, EPA recommends designing to prevent overtopping from at least a 24-hour, 100-year storm.

At the Mobile site, run-on from high-intensity storms, flowing over a wide area, could pose a significant problem at the hazardous waste facility. For this reason, ADHS has agreed that the facility contractor should design the facility to protect against a 100-year storm rather than a 25-year storm, if placed at the Mobile site.

As noted in the discussion of floodplains, stormwaters at the Mobile site would tend to flow over a wide area rather than from an identifiable floodplain. In a sense, then, protecting the facility against run-on from the 100-year storm would provide substantially the same protection that would designing for a 100-year flood. Consequently, use of the 100-year storm standard for design of the run-on control system should provide a high level of protection at the facility.

Design Considerations

There is a certain amount of risk involved in any design for purposes of flood protection. In general, flood risk is composed of both hydrologic risk and structural risk. Structural risk refers to the probability that a structure will fail during an event (flow) of lower magnitude than the design event. This is usually assumed to be zero, given proper engineering and construction. Hydrologic risk, on the other hand, is based on the uncertainty of events (flows) with magnitude greater than the structure design event. This is usually determined by the proposed lifetime of the facility. Table IV-1 indicates the probability of one or more more flows equal to or exceeding design capacity (the designed flood protection measures). For example, if the hazardous waste facility has a proposed lifetime of 20 years and an additional 30-year period during which it is monitored after closure, the flood protective measures could be designed for the 50-year design flood. If so, there would be a 64% chance that a flood greater than or equal to the 50-year flood would occur sometime during the 50-year period. (See Table IV-1.) Similarly, the chance that of at least one flood of this magnitude would occur within 50 years is 39%.

Obviously, the risk of experiencing one or more flows greater than or equal to the flow used as the design standard depends on which event is used as the standard. The more stringent the design requirements, however, the higher the construction costs.* Consequently, the additional cost of such requirements must be

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* For example, EPA estimates that a run-on control system designed for a 100-year storm could cost 7 to 25% more than a system designed for a 25-year storm, depending on location, watershed size, and unit size and design (10).

Table IV-1. Percent probability of one or more flows greater than or equal to the design flood in relation to the years of facility operation.

No. of Years of Operation	Return Period (Design Flood) 25	50	100	500
5	18	10	5	1
10	34	18	10	2
20	56	33	18	4
25	64	40	22	5
50	87	64	39	10
75	95	78	53	14
100	98	87	63	18

Source: Reference 12

weighed against the benefits provided in terms of protecting health and the environment (and the possibility that stricter design requirements may lower the cost of the owner's and operator's liability insurance).

AIR QUALITY

An area of great concern among those who commented on the Draft EIS was the potential for release of contaminants into the air. Several questions were raised about the effects of weather conditions on the facility, especially the effects of inversions and "dust devils" (rotating columns of air which carry dust or sand). Commenters also raised the issue of incineration and its overall impact on air emissions from the facility. Finally, some readers commented on air pollution monitoring requirements and on dust problems related to the facility. The following discussion addresses each of these areas of concern.

Effects Of Weather Conditions On Air Emissions

A temperature inversion (or "inversion") is a meteorological condition in which temperature increases rather than decreases with height through a layer of air. This creates a stable layer of the atmosphere which suppresses vertical air movement, thereby serving as a "lid" for gases which would otherwise rise from the earth's surface.

In an inversion, little dispersion of air pollutants occurs. Rather, the pollutants tend to remain at the level at which they are emitted. Consequently, emissions from an incinerator stack would not quickly disperse higher into the atmosphere nor mix toward ground level.

On the other hand, emissions from a surface impoundment, a landfarm, a landfill, or a spill would concentrate at ground level. Under these conditions, a light wind of about 2.5 meters per second (5 miles per hour) would create a "worst case" air emissions situation, since the wind would increase volatilization while providing minimal dispersion of the pollutants. Winds in excess of 2.5 meters per second would increase volatilization but also cause dispersal of gases in the ambient air. The assessment of toxic emissions from the landfarm assumes a "worst-case" wind speed of 2.5 meters per second. (See DEIS pp. 4-13 and G-5.) The hazardous waste spill scenario presented here in Section IV, Public Health and Safety: Spill Risks, also assumes this wind speed.

Several commenters raised the possibility that high winds (such as dust storms and dust devils) common to the desert could transport contaminated particles from the facility to population centers to the east. High winds are particularly common during the summer when subtropical storms pass through Mexico and into Arizona.

Dust devils occur sporadically, generally during the late morning through mid-afternoon hours on days with light winds and intense solar heating (i.e., clear skies). They are formed when a localized parcel of air next to the surface becomes superheated, and rises to form a swirling column of air. Wind speeds in the larger dust devils can approach 40 mph or more, over an area up to several hundred yards in diameter. In this localized area of high winds dust can be suspended and transported along the path of the dust devil. These disturbances last for only a few minutes because their energy source (localized surface superheating) rapidly dissipates.

More significant wind-related problems could occur during dry summer thunderstorms or dust storms and during the springtime when sustained strong winds are the most common. Based upon Phoenix wind data, strong winds (>20 mph) occur nearly 1.0 percent of the time in the area of the Mobile site. Phoenix weather records indicate that annual and monthly average wind speeds are in the range of 5 to 10 mph. Peak gusts of up to 86 mph have been recorded during severe thunderstorms. High velocity winds have been recorded from all compass directions, but extreme winds from the west through southeast are most common.

Information on the types and amounts of waste to be handled at the facility and on the treatment and disposal processes to be used is not available in sufficient detail at this time to project the potential transport of contaminated particulates and potentially toxic volatile organics under high wind conditions. EPA agrees that this problem needs to be addressed in the facility's hazardous waste permit, when more detailed information would be available. There are two provisions in the Federal regulations which address this problem:

- a requirement that wind dispersal of particulate matter from piles, landfarms, and landfills be controlled (40 CFR 264.251(f), 264.273(f), and 264.301(f)); and,
- a requirement that the facility be designed, constructed, maintained, and operated to minimize the possibility of an "unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents into air" (40 CFR 264.31).

In applying for the permit, the facility operator would show how these requirements would be met. The following types of data should be provided in the application:

- Types, concentrations, and volatility of chemical compounds typically contained in the wastes to be handled at the facility.
- A description of analytical techniques which will be used to analyze incoming waste samples for volatile or toxic content.

- Documentation of the expected volatilization from treatment and disposal units.

- Documentation of the potential for dust storms or dust devils at the site to cause pollution problems in populated areas.

- A plan for monitoring meteorological parameters such as wind speed and direction and ambient temperature.

- Documentation that adequate cover material for landfills and adequate depth of subsurface injection for land treatment will be employed.

- A plan for changing operations when weather conditions could lead to elevated emissions of potentially toxic compounds.

- A preventive maintenance and inspection plan for equipment, to minimize the possibility of "sudden unplanned" emissions.

- A provision in the facility's emergency response contingency plan for controlling unplanned emissions, focussing on high probability or high exposure incidents.

In the permit process, a determination would be made whether pollutant dispersion measures proposed by the facility operator would be adequate to meet the requirements in the regulations. Adequate control measures would then become a condition of the permit which the operator would have to observe.

In addition, ADHS may wish to require the following information to ensure compliance with State regulations which require appropriate equipment devices which are adequate to monitor and control the escape of fumes and gases into the environment (Arizona Regulation R9-8-1821 A.2):

- Evidence that maximum removal of volatile organics from the wastes prior to treatment will occur (i.e., through solvent recovery distillation, steam stripping, etc.).

- Evidence that processes to remove volatile organics will have effective emission controls, such as carbon adsorbers, in place.

Potential Emissions from a Facility With Incineration

The representative facility design used in the Draft EIS does not include any "high technology" treatment process, such as high temperature incineration. After the Draft EIS had been published, ADHS received a proposal which included an incinerator.

The bidder, ENSCO Inc., submitted comments on the Draft EIS noting that this should be addressed in the Final EIS. (See Section VI.) Other commenters also suggested the Final EIS consider "high technology" alternatives.

As a result of these comments, the following analysis has been prepared to estimate potential air emissions from a facility with an incinerator. The analysis is in a format which allows comparison between these estimates and the air emissions estimates for the representative facility design used in the Draft EIS. The analysis makes the following assumptions:

- The wastes handled by the facility are the same types and quantities as the facility waste stream described in the Draft EIS with one exception: 10,000 to 12,000 tons per year of polychlorinated biphenyls (PCBs) would be added for treatment in the incinerator.
- Certain wastes which, in the design used for the Draft EIS, would have gone to the landfill (chlorinated solvents) and the landfarm (biodegradable organics) would be incinerated. This would eliminate the need for a landfarm, although a reduced landfill operation would continue to handle incinerator residues (ash) and some other solid or stabilized wastes.
- As in the Draft EIS, acids and alkalis, and wastewaters with heavy metals and/or cyanide would be placed into surface impoundments and wastes in the "various solvents" category would be treated in a solvent recovery unit.

These assumptions have been made in order to provide a basis for comparison of the air quality impacts of an incinerator operation with those of the land-based treatment and disposal operation assessed in the Draft EIS. Because actual emissions from the facility would vary according to its specific design and operating features, and the types and quantities of wastes, these estimates should be viewed as an indication of possible emissions rather than a precise projection.

Volatile Organic Compounds

Volatile organic compounds (VOC) are of concern because excessive amounts of VOC (in combination with oxides of nitrogen) can lead to the formation of ozone or "smog" and because some volatile organics are documented or suspected toxic compounds. Table IV-2 below shows estimated VOC emissions from the representative facility design without incineration (Representative Design #1) and a facility design with incineration (Representative Design #2). VOC emissions estimates for the incinerator are based on EPA regulations which require that an incinerator destroy or remove 99.9999% of the PCBs and 99.99% of other hazardous waste constituents.*

At these removal rates, the anticipated 10,000 to 12,000 tons per year of PCB wastes would result in emissions of approximately 0.01 tons per year, while 238 tons of biodegradable organic wastes would result in emissions of approximately 0.02 tons per year.

As Table IV-2 shows, VOC emissions from a representative "high technology" facility would be far less than emissions from a facility which is landfills and landfarms the same wastes. These estimates also indicate that an incinerator handling these quantities of wastes in an enclosed manner would not likely need a PSD air quality permit, since the VOC emissions are well below 250 tons per year. (See DEIS pp. 4-10 and 4-13 for a discussion of PSD permits.) It is possible, however, that if the solvent recovery unit were operated at full capacity of 3600 tons per year, VOC emissions from the unit could exceed 250 tons per year.† In that case, an air quality permit would be required. On the other hand, emissions control techniques that would likely be used on the solvent recovery unit could keep VOC emissions to a much lower level. An estimate of VOC emissions from a specific unit or design would have to be made to determine whether a PSD permit would be needed.

It should also be noted that use of the incinerator at full capacity, which would mean about a ten-fold increase in the amount of wastes being treated, would increase VOC emissions to an estimated 0.4 tons per year.** This increase is insignificant relative to the amounts of VOC emitted by the representative facility without incineration.

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* Under EPA's PCB regulations (40 CFR 761), the mass air emissions from an incinerator burning non-liquid PCBs can be no greater than 0.001 gram PCB per kilogram of PCB introduced into the incinerator; hence, 99.9999% of the PCBs would be removed. No mass air emission limit is set for liquid PCBs; however, incinerators generally are able to meet the 99.9999% rate. The requirement to remove 99.99% of the hazardous constituents in hazardous waste is contained in a different set of regulations. (See 40 CFR 264.)

† The Draft EIS assumes 300 tons per year would be treated in the solvent recovery unit. The full capacity estimate (900 lb/hour) is from ENSCO (13).

**The full capacity estimate is from ENSCO (3).

Table IV-2. Volatile organic compound (VOC) emissions for representative facility designs.

Waste Type	Rep. Design #1* No Incineration		Rep. Design #2 with Incineration	
	Process	Emissions (tons/year)	Process	Emissions (tons/year)
Chlorinated Solvents	landfill	40-157	inciner.	0.02
Various Solvents	solvent recovery	3-30	solvent recovery	3-30
Biodegradable Organics	landfarm†	12-71	inciner.	0.02
Acids/Alkalis, Wastewater, Cyanides	surface impound.**	0-40	surface impound.	0-40
PCBs	none	none	inciner.	0.01
TOTAL		55-298		3-70

* From the Draft EIS, pp. 4-13 and 4-14, and Appendix G.

† The Draft EIS poses two scenarios for the landfarm. The first assumes the facility has no solvent recovery unit, so wastes in both the "various solvents" and "biodegradable organics" categories are treated in the landfarm. The second scenario assumes there is a solvent recovery unit which treats the "various solvents," while biodegradable organics go to the landfarm. Since the ENSCO proposal includes solvent recovery, only the second scenario is included for this comparison.

**In the Draft EIS, one figure of 40 tons per year is given for VOC emissions from the surface impoundments. This may be somewhat misleading. No theoretical calculations were made for the surface impoundments because the representative design does not call for disposal of organic compounds in the surface impoundments. Because other facilities do place such compounds in impoundments, however, this possibility can not be ruled out at the proposed facility. Consequently, an empirical measurement made at another hazardous waste facility was used to estimate a maximum emission rate of 40 tons per year. It is more accurate to present this as a range of 0 to 40 tons per year to account for the possibility that no organic compounds would be placed in the impoundments.

Toxic Emissions

Test data from two operating incinerators show emissions of two potentially toxic pollutants which could be emitted from the incinerator: dioxin (tetrachlorodibenzodioxin, or TCDD) and furan (tetrachlorodibenzofuran, or TCDF). These two substances have been identified as by-products of PCB incineration.

The source tests detected emissions at levels ranging up to 0.039 ng/dscf for dioxin and 12.0 ng/dscf for furan.* Risk assessments were performed by EPA to determine the impact on public health from dioxin and furan emissions from the stationary incinerators in Arkansas and Texas. For the Arkansas incinerator, the additional risk of cancer was calculated to be less than one case per 2.5 million people exposed (14).† At the Texas facility, the additional risk was estimated at less than one case per 50,000 exposed persons (15).

Insufficient data are available at this time to project the potential emissions of TCDD and TCDF from the proposed Arizona facility. Emissions estimates would have to be made before the facility would be issued a PCB-disposal permit by EPA. Based on the emissions estimates, EPA would conduct a risk assessment to identify the potential risk to public health posed by the emissions (see the following discussion of mitigation measures).

Particulate Emissions

While construction activities were the only significant source of particulate emissions identified for the representative facility addressed in the Draft EIS, inclusion of an incinerator could alter the level of Total Suspended Particulates (TSP) emissions from the facility. Particulate emissions (in the form of ash, condensed vapors, or soot) have been measured at existing incinerators and have ranged from 1 to 91 tons per year. Assuming a "worst case" emission rate at the proposed facility of 91 tons per year, the incinerator would add 13 ug/m^3 particulates to the ambient air concentrations (24-hour average).

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* ng/dscf = nanograms per dry standard cubic foot (10^{-9} grams/dscf).

† The emissions used to calculate the risk were 0.005 ng/dscf for TCDD, and 0.060 ng/dscf for TCDF. These were the average emissions from the stationary incinerator. The higher numbers which appear above (0.039 ng/dscf for TCDD; 12.0 ng/dscf for TCDF) are from a mobile incinerator. A risk assessment has not been conducted for the mobile incinerator.

Particulate emissions from the incinerator, combined with dust emissions caused by construction activities (estimated to be 10-11 ug/m^3),* would not be expected to exceed air quality standards. They would nonetheless add to the existing problem of naturally-occuring particulate problems at each of the sites caused by dust storms, etc.

Mitigation Measures

In the case of construction activities, surface impoundments, and solvent recovery, measures to mitigate air pollution problems would be the same as those identified in the Draft EIS.

Toxic emissions. If the selected contractor includes a PCB incinerator in the final design submitted to the State, EPA would conduct a quantitative risk assessment, such as those conducted for other PCB facilities, to determine any potential health risks posed by incinerator emissions. This would be used in the permit process to guide permit writers on necessary design or operating conditions to mitigate significant potential health risks.

A risk assessment estimates the probability of occurrence of some adverse consequence per unit of specified time and per unit of specified population. In other words, using the same approach as the risk assessments for the other two PCB incinerators, the assessment could identify the probability that one additional cancer case would occur over a 70 year period per X number of exposed persons (e. g., one cancer case per 50,000 exposed persons; one per million, etc.).

Additional sampling of air emissions from the existing mobile incinerator may be needed to conduct the assessment (at a cost of roughly $50,000). That data would be modeled to show the maximum concentration of the compounds in the atmosphere. A cancer risk factor would be applied to that maximum concentration to arrive at the potential cancer risk. In determining an acceptable level of risk, decision-makers would need to consider the number of persons who could be exposed to that concentration.

Particulates. The amount of particulate emissions from the incinerator would be a function of the amount and types of wastes burned and the efficiency of the burn. Operating conditions established in the facility's hazardous waste and PCB disposal permits would minimize particulate emissions.

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* See Draft EIS pp. 4-12 and 4-15.

Monitoring of Facility Emissions

Facility emissions subject to monitoring would be monitored on-site by the facility operator. The specific requirements would depend on the source and type of emission.

Solvent Recovery

The State could require monitoring of the solvent recovery unit under the State hazardous waste regulations. Depending on the amount of wastes handled in the recovery unit and the anticipated emissions of VOC, an air quality permit (PSD) might also be required in addition to the hazardous waste permit (see DEIS pp. 4-10 to 4-13). This is not expected to be the case, but a final determination would depend on the specific design and operating plans of the facility contractor.

Incinerator

If an incinerator were located at the facility, EPA would require that the exhaust emissions be sampled and analyzed to verify that the operating requirements established in the permit achieve the required performance standards. These standards require destruction and removal of 99.99% of each principal organic hazardous constituent (POHC) identified in the permit.

When an incinerator is first used to dispose of PCBs, the operator must sample stack emissions for several substances, including PCBs and Total Particulate Matter (see 40 CFR 761.70). The operator must also monitor certain combustion parameters whenever PCBs are incinerated to indicate that the operating requirements are being met.

Other Toxic Pollutant Emission Sources

Federal regulations contain no specific requirements for monitoring toxic pollutants from surface impoundments, waste piles, landfills, or land treatment units. As noted earlier, however, there is a prohibition against the "unplanned release of hazardous wastes or hazardous waste constituents into air" (40 CFR 264.31). In order to show compliance with this standard, the facility operator would have to demonstrate what emissions were expected to occur normally during operations, then monitor to see whether these normal conditions were exceeded.

In addition, the State hazardous waste regulations require appropriate equipment adequate to monitor and control the escape of fumes and gases into the environment. These monitoring requirements would be established as part of the facility permit.

Dust Control

Some comments on the Draft EIS addressed the potential dust problem due to construction activities and truck traffic on unpaved roads. The Draft EIS states that "ADHS would ensure that the contractor minimizes the impacts of fugitive dust" and suggests several measures that could be taken to accomplish this (DEIS p. 4-14). The measures address both the temporary problems caused by construction activities and additional potential problems during operation of the facility.

ADHS is committed to working with the contractor to implement dust control measures at the sites. To control dust generated by truck traffic on the access road, ADHS would require the use of some form of dust suppressant until the roads are paved.

Under the conditions of the contract with ADHS, the facility contractor would pave six miles of road leading into the facility. At the Western Harquahala Plain and Ranegras Plain sites, that would cover the entire distance between the sites and I-10. At the Mobile site, however, some 15 miles of dirt road between Mobile and Maricopa would remain. It is possible that Provident Energy Company would pave that segment of the road to provide access to its proposed refinery at Mobile. At this time, however, it is not certain whether this project will proceed, or, if it does proceed, whether the company would pave all or only part of the road segment. (This is more fully discussed in the following section, Public Health and Safety: Spill Risks.)

An average of one to two trucks per hour would be expected to travel to the hazardous waste facility. If the road were unpaved, dust generated by these passing trucks could affect other travelers on the road as well as adjacent lands, including the Gila River and the Ak Chin Indian Reservations, which lie adjacent to the road at certain points.

It should be noted that dust problems are common in the desert areas of Arizona. As the Draft EIS notes, violations of the "particulates" air quality standard in the vicinity of the proposed sites have been attributed to natural causes such as dust storms rather than man-made causes.

While air quality monitoring does not take place in the Mobile or Maricopa areas at this time, ADHS has the ability to monitor if needed.* ADHS would respond to complaints about excessive dust problems from truck traffic on the unpaved road by monitoring along the road and working with the facility contractor to mitigate any problems identified. While paving the road would be the best mitigation measure, periodic use of dust supressants along the road could help to control the problem.

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* An air monitoring station northwest of Maricopa, from which data were drawn for the Draft EIS, was closed in 1982.

PUBLIC HEALTH AND SAFETY: SPILL RISKS

Risks from Transporting Hazardous Waste

A number of comments on the Draft EIS concern issues related to transportation of hazardous waste to the proposed facility. These concerns relate primariliy to:

- the risk from transport of hazardous waste compared to the risk posed by transport of hazardous materials; and,
- specific safety problems on the access routes to the Mobile site, including the use of two-lane roads, the condition of those roads, and the proximity to schools in Maricopa and Mobile.

Background: The Draft EIS

The Draft EIS presents a risk assessment based on the shipment of wastes from Phoenix and Tucson to each of the three proposed sites. This represents nearly 90 per cent of total wastes generated in Arizona expected to be transported to the hazardous waste facility. Using the total volume of wastes generated in each city and the average volume or weight of wastes transported per vehicle, a determination was made of the number of trips that would originate annually from Tucson and Phoenix.

Possible routes from the two metropolitan areas to the three proposed sites are identified. Descriptions of the alternative routes are described in Tables 4-4, 4-5, and 4-7 (DEIS pp. 4-19, 4-20, and 4-23, respectively). Using accident statistics from the Arizona State Department of Transportation for each route, accident rates were estimated. An accident rate for a particular route would show the number of accidents that had occurred for every 1,000 vehicle miles. For example, Route A (DEIS Table 4-4) from Tucson to the Mobile site has an accident rate of 0.0006 accidents per 1,000 vehicle miles. The accident probability is an estimate of the expected accidents per year of motor vehicles carrying hazardous waste. The accident probability is determined by first estimating the total distance traveled yearly by motor vehicles carrying hazardous waste between Phoenix and Tucson and the three proposed sites. The accident rate along a designated route is applied to this distance to determine the accident probability--the number of accidents expected yearly by hazardous waste carriers.

Tables 4-4, 4-5, and 4-7 in the Draft EIS show that expected accidents by motor vehicles carrying hazardous waste would be extremely low, less than one per year. The analysis does not consider the probability of a release of waste material into the environment as a consequence of an accident. Not all accidents would result in the release of hazardous material. Thus, the risk estimates in the analysis may be somewhat overestimated.

The route with the highest accident probability and highest population risk factor* is the route from Phoenix to the Western Harquahala Plain and Ranegras Plain sites, along Interstate 10. Because I-10 is not completed between Phoenix and Avondale, travel on surface streets (primarily Buckeye Road) is required on that portion of the route. A relatively high accident rate on this segment increases the overall accident rate along the entire route.

As noted in comments on the Draft EIS, completion of this segment of I-10 would be expected to lower the accident rate and the population risk factor on this route. One commenter felt the use of the higher accident rate overstates the actual risk of transport to the alternative sites compared to the risk of transporting wastes to the Mobile site.

We agree that the accident rate is likely to be reduced upon completion of I-10. This does not guarantee, however, that the risk factor of this route would necessarily be significantly lower than that of other routes. Even if completion of I-10 meant the current accident rate were cut in half, the population risk factor would be approximately 9,300. This compares with factors of 9,312, 17,212, and 2,088 for the alternative routes from Phoenix to the Mobile site.†

Transportation of PCB Wastes

If a PCB incinerator were included at the proposed Arizona facility, it is estimated that approximately 360 shipments of PCB waste would be delivered to the facility annually (6). This would average to one to two trucks per day in addition to the estimated 8 trucks per day delivering hazardous wastes generated within Arizona.

This estimate is based on projected shipments from major cities in Western states, as shown in Table C-1, Appendix C. The majority of these shipments, about 270 per year, would be expected to enter Arizona from California on Highway I-10. Most of the other shipments would likely enter Northern Arizona on U.S. 89 or I-40, then take I-17 from Flagstaff to the Phoenix area and follow the previously identified access routes to the facility (see Figure IV-1). About a dozen PCB shipments would be generated each year in the Phoenix area.*

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* See Appendix N of the Draft EIS for an explanation of the steps involved in arriving at the population risk factor.

† It should be noted that the figure of 2,088 is for the Mobile access route preferred by ADHS.

Appendix D presents an analysis of the additional risk that PCB shipments would present along likely site access routes. Routing an additional 89 trucks per year through or from the Phoenix area to the Western Harquahala Plain or Ranegras Plain sites via I-10 would increase the population risk factor along that access route by about four percent over the risk presented by hazardous waste shipments generated within Arizona (as analyzed in the Draft EIS; see DEIS p. 4-25). Routing the PCB shipments to the Mobile site would increase the population risk factor along the preferred access route from Phoenix to the site, Route C, by almost 140%.† It should be noted, however, that even with this large a percentage increase, the population risk factor along this route would remain the lowest of all access routes. The population risk factors for alternative routes to the Mobile site, routes A and B, would increase by about 44% and 32%, respectively.

Existence of a PCB incinerator in Arizona would be expected to shift PCB waste transport patterns through the western states, since much of the waste currently shipped to incinerators in Arkansas and Texas could be sent instead to the Arizona facility. It is estimated that, at present, nearly 175 trucks per year pass through northern Arizona on I-40 en route to the incinerator in Arkansas. Another 13 or so shipments per year leave Phoenix for the same facility, presumably travelling I-17 to Flagstaff, then I-40 eastward. PCB shipments currently travelling from California and other far western states to the incinerator in Deer Park, Texas (near Houston), are presumed to pass through Phoenix and Tucson on I-10. Records maintained by the Texas Department of Water Resources show, that during 1982, four PCB shipments were sent from California to the Deer Park incinerator (16). Another 37 shipments originating outside Texas were recorded that year, but the points of origin are not identified. Consequently, up to 40 shipments of PCBs per year may be passing

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* It should be emphasized that these are rough estimates. Periodic shipments from different points of origin, following different routes, could be expected. For example, 1982 manifest data from the Arkansas Department of Pollution Control show PCB shipments to the existing PCB incinerator in El Dorado originating in other Arizona towns, such as Kingman, Bagdad, Benson, and in the Tucson area.

† As shown in Appendix D, this includes the segment between the Western Harquahala Plain/Ranegras Plain sites and Phoenix, which would be travelled by approximately 272 trucks per year carrying PCBs from California.

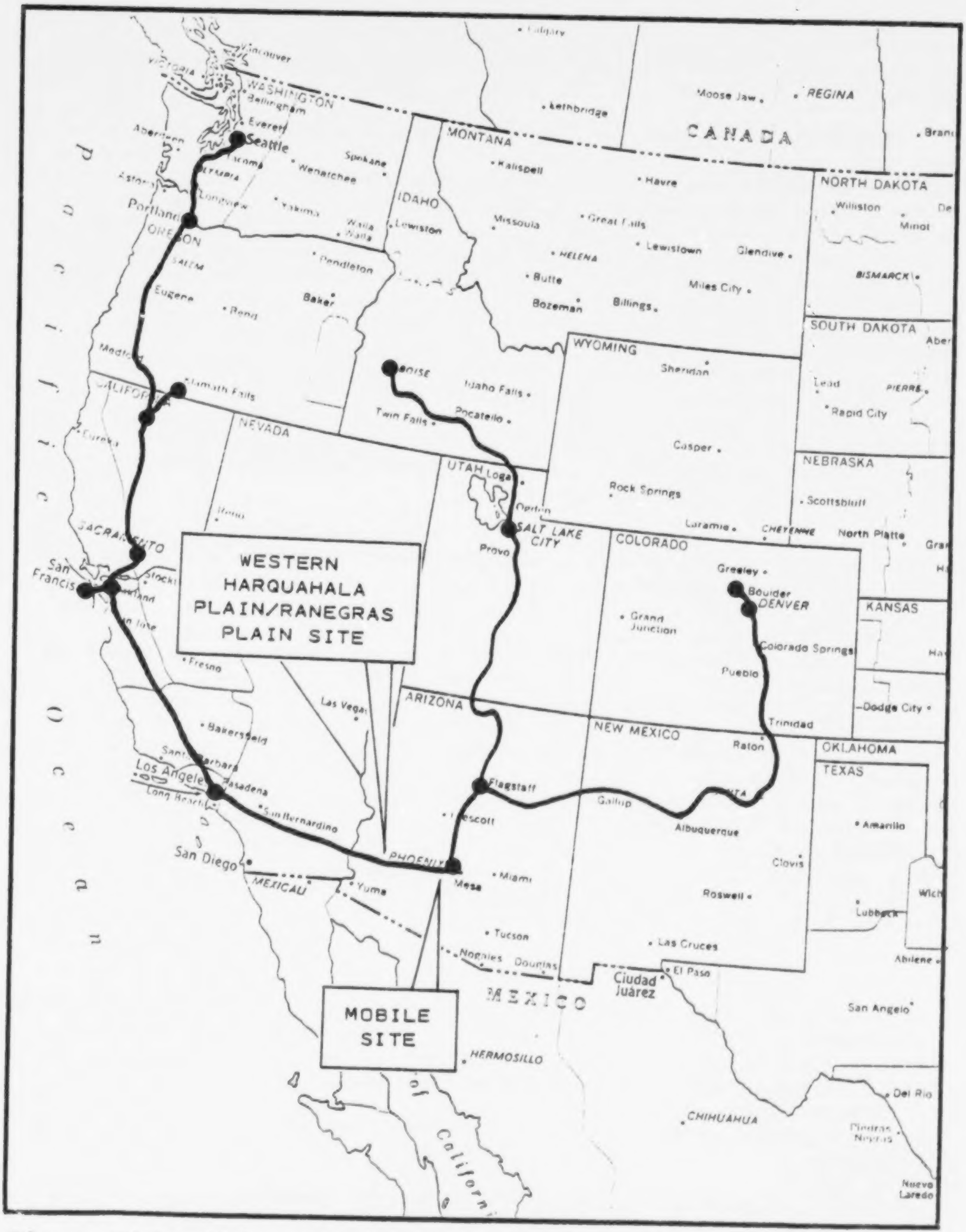
WESTERN
HARQUAHALA
PLAIN/RANEGRAS
PLAIN SITE
MOBILE
SITE
Pacific Ocean
CANADA
MEXICO
Gulf of California
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
Seattle
Portland
Sacramento
San Francisco
Los Angeles
Pasadena
San Bernardino
San Diego
Phoenix
Mesa
Flagstaff
Salt Lake City
Boise
Boulder
Denver
Klamath Falls
Pocatello
Twin Falls
Idaho Falls
Ogden
Provo
Logan
Colorado Springs
Pueblo
Trinidad
Raton
Santa Fe
Albuquerque
Gallup
Prescott
Tucson
Nogales
Douglas
Yuma
Mexicali
Las Vegas
Bakersfield
Santa Barbara
Long Beach
Fresno
San Jose
Oakland
Stockton
Eureka
Medford
Eugene
Salem
Bend
Baker
Pendleton
Walla Walla
Yakima
Wenatchee
Spokane
Tacoma
Everett
Bellingham
Vancouver
Victoria
Aberdeen
Astoria
Longview
Lewiston
Missoula
Kalispell
Helena
Butte
Bozeman
Great Falls
Havre
Lewistown
Billings
Glendive
Miles City
Sheridan
Casper
Rock Springs
Laramie
Cheyenne
Greeley
Grand Junction
Calgary
Lethbridge
Moose Jaw
Regina
Williston
Minot
Bismarck
Pierre
Rapid City
Lead
Scottsbluff
North Platte
Dodge City
Amarillo
Lubbock
Clovis
Roswell
Las Cruces
El Paso
Ciudad Juarez
Abilene
San Angelo
Del Rio
Piedras Negras
Nuevo Laredo
Chihuahua
Hermosillo
Miami

Figure IV-1. Major transit routes for PCB shipments to proposed Arizona Hazardous Waste Management Facility.

through Arizona en route to Texas, although the actual number is probably less since it is unlikely that all of those shipments originated in western states.

With a PCB facility in Arizona, the number of PCB shipments travelling I-10 between California and the facility would be expected to increase significantly, as shipments currently travelling I-40 to the Arkansas facility are routed instead to the Arizona site. Similarly, PCB traffic on I-17 between Flagstaff and Phoenix would increase due to shipments from states such as Idaho, Utah, and Colorado. The increase in accident risk along the access routes to the Arizona facility, however, could be offset by a reduction in current PCB traffic on I-40 through Northern Arizona (shipments currently sent to Arkansas from the West Coast). PCB waste traffic, and the accident risks associated with it, could similarly be changed in other states. As Table C-1 shows, shipping the projected amount of PCB wastes to a facility at the Western Harquahala Plain/Ranegras Plain sites could save over 380,000 total travel miles over trucking the same number of PCB shipments to the existing Arkansas facility. Over 340,000 travel miles could be saved by shipping the wastes to a facility at the Mobile site. Since the Texas facility is approximately the same distance from these cities as the Arkansas facility, additional savings in travel mileage would be realized if shipments to that facility went instead to an Arizona facility.

The overall safety impacts of shifting the routes of one to two PCB trucks per day are difficult to assess. Since a reduction in PCB traffic could be expected along some routes from western states to the Arkansas facility, such cities as Albuquerque, Amarillo, Oklahoma City, Little Rock, San Antonio, and Houston could experience a small decrease in the risk of PCB spills. On the other hand, the Los Angeles area could experience an increase in PCB traffic because trucks from Northern California, Oregon, and Washington which currently travel I-40 through northern Arizona could instead connect with I-10 in Los Angeles in order to reach the Arizona facility on a more direct route. Within Arizona, PCB traffic on I-40 through Kingman and Flagstaff would likely be reduced due to greater use of I-10 from points of origin on the West Coast.

At least two companies have indicated in interest in developing a PCB incinerator in California. Although EPA has not been formally advised of any firm plans to proceed at this time, the possibility that such a facility could be developed cannot be dismissed. In that case, much of the PCB waste currently generated in California and other nearby states could go to the California facility rather than the Arizona facility (depending largely on economic factors such as transport costs and disposal fees charged by the facilities). This could substantially reduce the amount of PCB traffic passing through Arizona.

Potential for Rail Transport of Hazardous Wastes

The closeness of the Southern Pacific Railroad (SP) line to the Mobile site raises the possibility of rail transport of hazardous wastes. SP representatives have indicated they would consider the development of a spur line to a hazardous waste facility if it were economically feasible (17).

Several factors, however, cast doubt on the feasibility of rail transport of wastes. For one thing, railroads emphasize bulk shipments of hazardous materials in tank cars; hazardous wastes are usually transported in drums which incur greater handling costs. Also, transport of waste within Arizona would primarily involve the shipment of small volumes over relatively short distances from the State's two major metropolitan areas. It would probably not be economical to make such shipments by rail.

Consequently, the feasibility of rail transport to the facility would likely depend on bulk shipment of wastes over long distances from out-of-state. This is most likely to occur if a PCB incinerator is included at the facility. Approximately 5% of the wastes going to one existing incinerator are transported by rail (18).

Whether transport of hazardous waste by rail would reduce or increase the risk of transportation accidents involving hazardous waste en route to the facility would depend on the number of shipments made by rail and the accident rate on the rail lines travelled. Nation-wide, the accident rate for trains has been decreasing in recent years. In 1981, the rate was 8.55 accidents per million train miles (or 0.0085 accidents per thousand train miles). This is 5% below the 1978 accident rate (19). This compares, however, to an average accident rate for commercial motor vehicles in Arizona of 0.005 accidents per thousand vehicle miles (20).

Transportation of Hazardous Materials

Some commenters felt the Draft EIS overemphasizes the health risk due to transport of hazardous waste, especially when compared to the existing risk from the transport of hazardous materials (that is, hazardous substances which are still in commercial use). Two factors have been cited as contributing to the lower relative risk from the transport of hazardous waste:

- The amount of hazardous waste being transported is very small compared to the amount of hazardous material being transported.

- Hazardous waste is generally much more dilute than hazardous materials, which may be nearly pure compounds.

> That is, the higher volume and concentration of a typical hazardous material shipment is likely to pose a much greater hazard if spilled than a typical shipment of hazardous waste.

The Arizona Department of Health Services estimates that, in 1981, approximately 21,500 tons of hazardous wastes generated in Arizona were shipped by the generator to a treatment or disposal facility. In contrast, it has been estimated that an average 180,000 trucks pass through Arizona's ports of entry every month, and of these, six percent carry hazardous materials (21). It has also been estimated that only one-half of these carriers have full cargos. Thus, if only three percent of carriers carry full cargos of 45,000 pound payloads, the amount of hazardous material transported in Arizona by truck per year would be about 1.46 million tons. The ratio of hazardous material transported in Arizona to hazardous waste shipments is about 68:1.

Table IV-3 shows the type and amounts of hazardous material transported in Arizona and is based on a sampling of 4,438 commercial motor vehicles in 1981. Hazardous waste carriers were not found in this 1981 survey.

Although a large amount of hazardous material is transported by motor vehicle, railroads carry the bulk of hazardous material. Railroads move approximately 70% of all hazardous material; this amounts to about 5% of total rail carloads (22). In 1982, 1.2 million cars of hazardous material (80 million tons) was transported. About 80 percent of the material is carried in tank cars, is concentrated, and poses extreme risk when accidentally released (22).

Table IV-4 shows the type and volume (by number of tank cars) of hazardous material carried by the Southern Pacific Railroad (SP) in Arizona. Much of this material is carried on the SP line which runs past the proposed Mobile site and the access road between Mobile and Maricopa. The data show that traffic of hazardous waste to the Mobile facility would be much smaller than the amount of hazardous material currently transported on the nearby railroad.

Serious accidents involving hazardous material have occurred in Arizona. The State Department of Public Safety estimates that in the 1980-81 period, 80 accidents involving hazardous materials transported by truck and rail were reported. According to the U. S. Department of Transportation railroad accident statistics for Arizona for 1981, 79 carloads of hazardous material were involved in accidents, and of these, 27 were damaged. In three railcars, hazardous material was released. In 1981, 2,500 people were evacuated in Arizona because of rail accidents involving hazardous material. In 1983, a carload of phosphorus was released near Casa Grande, resulting in a serious hazard (19).

Table IV-3. Hazardous materials hazard class
Total H/M count in pounds

This form is Part #2 of Table #1 Carrier's Code as listed Table #1	Class A	Class B	Class C	Flam-mable	Combus-tible	Flam-mable	Flam-mable	Non/ Flam-mable	Poison A	Poison B	Corro-sive	Oxi-dizer	Organic	Radio-active	Hazar-dous
	Explo-sive	Explo-sive	Explo-sive	Liquid	Liquid	Gas	Solid	Gas			Mat'l		Perox-ide	Mat'l	Waste
1. Yuma	150	6507	798	440236	15233	285171	165	48910			106062	101820	10000		
2. Ehrenberg	0	46	248	195993	23847	13294	700	95476		4009	227121	60048			
3. Kingman		890		10533			42136	216			64540	95020			
4. Williams	50788		3524	143828	2079	40274	92591	68606		41190	79592	1019		114	
5.															
6. TOTAL	50938	7443	4570	790680	41159	338739	135592	213208		45199	477315	257907	10000	114	
7.															

Hazardous Materials Transportation sampling conducted May 17 to 19, 1981 at Yuma (I-8), Ehrenberg (I-10), Kingman (U.S. 93), and Williams (I-40). Crews worked 4 hours on duty and 6 hours off duty beginning at 11:00 p.m. May 17, 1981.

During hours of inspection, 4,438 heavy commercial motor vehicles passed the inspection points.

There were 263 motor vehicles transporting hazardous materials. (Percent of total vehicles transporting hazardous materials - 5.92%)

Inspection crews included personnel from the following agencies:

Arizona Corporation Commission
Arizona Dept. of Public Safety
Motor Vehicle Division, ADOT
Federal Highway Administration, U.S. DOT
Interstate Commerce Commission

Source: Arizona Department of Transportation, Charles Kapuscak, Hazardous Materials Specialist.

Table IV-4. Hazardous material carried by the Southern Pacific Railroad in Arizona, 1982

Hazardous Material	Railroad Car Loads		Truck Trailers
Chlorine	372		--
Flammable Gases	12,942		743
Hydrofluoric Acid	205		--
Poison Gas	8		56
Radioactive Material	--		14
Sulphur Dioxide	133		--
Class A Explosives	384	boxcars	21
All Other Material (e.g., sulphuric Acid, Gasoline)	87,357		--
TOTAL	101,401		834

Source: Reference 17

Compared to hazardous waste, hazardous material may pose a greater risk to populations along transport routes because it is routinely transported in large volumes and because it generally consists of concentrated materials. Hazardous waste shipments, on the other hand, usually involve smaller shipments, and the hazardous constituents in the waste are generally diluted (mixed with wastewater sludges, or non-hazardous solid materials, etc.). It should be noted, however, that the mixed nature of hazardous waste can make a waste spill more difficult to handle than a hazardous materials spill, since a number of different hazardous substances in varying concentrations may be involved.

In sum, the data show:

- Hazardous material transportation in Arizona far exceeds the volume and weight of hazardous waste shipments.
- Accidents involving hazardous material have exceeded incidents involving the shipment of hazardous waste.
- The risk of spills of hazardous waste in transit has been determined to be low. Hazardous waste is generally less dangerous than hazardous material because it is less concentrated. However, it may be difficult to deal with a mix of hazardous wastes.

- The Mobile area is at risk from hazardous material transported by the Southern Pacific Railroad, which runs south of Mobile and within 1,000 yards of the community. In 1981, over 100,000 carloads of hazardous materials were transported by the SP in Arizona, much of it over the line near Mobile.

It should be noted that the Western Harquahala Plain and Ranegras Plain sites are close to a major route for transporting hazardous materials: Interstate 10. Table IV-3 shows, for example, that over 300 tons of hazardous materials passed through Ehrenberg on I-10 during a three-day sampling period. At that rate, the amount of hazardous materials shipped on I-10 would approximately equal the amount of hazardous waste shipped to the waste facility, although this probably underestimates the amount of hazardous material because the sampling on which Table IV-3 is based was not conducted over full 24-hour days.

At both the Mobile site and the alternative sites, then, the transport of hazardous wastes would represent an increase in risk over the risk currently posed by the transport of hazardous materials. Estimated accident probabilities for hazardous waste shipments, however, show the risk to be low.

Additional Transportation Risks at the Mobile Site

The safety of access routes into the Mobile site compared to routes into the alternative sites was raised by several persons commenting on the Draft EIS. Specific concerns are:

- the number of miles of two-lane roads that must be travelled to reach the Mobile site (30 to 50 miles compared to approximately 6 miles for the alternative sites).
- the condition of the two-lane roads leading to the Mobile site.
- co-use of or crossings over the El Paso Natural Gas pipeline roads.
- the existence of schools alongside the access roads in Maricopa and Mobile.

Two-lane roads. The Draft EIS assumes hazardous waste will be transported to the Mobile site via I-10 from Phoenix and Tucson. There are several routes the transporters could take between I-10 and the site (see DEIS Tables 4-4 and 4-5, pp. 4-19 and 4-20, respectively). Each of these routes would involve travel on two-lane roads for distances ranging from approximately 30 to 50 miles. It is likely that most of the shipments would come from or through the Phoenix area,* exit I-10 at Chandler and travel down the Maricopa Road to Maricopa, then take the Maricopa-Gila Bend Road to the site. This route would involve about 33 miles travel on two-lane roads.

Since limited access highways are generally considered safer than unlimited access roads, the need to route traffic over these two-lane roads was identified as a drawback to the Mobile site in ADHS's siting report (1). Highway safety, however, is affected by many different factors. The analysis of transportation risks presented in the Draft EIS shows the Phoenix-Chandler-Maricopa-site route to have overall a relatively low accident rate of 0.0003 accidents per 1,000 vehicle miles (see DEIS Table 4-5, page 4-20). This is the lowest accident rate of all the routes considered to either the Mobile site or the alternative sites. Based on accident rate statistics and total mileages for the various routes, the projected probability of total commercial vehicle accidents and hazardous waste transport accidents for this route compares favorably with those of the other routes to the Mobile site and to the alternative sites, even those which are almost totally on four-lane limited-access highways. While firm conclusions about the absolute safety of a particular route cannot be drawn from such statistics alone, the projections suggest that there is no reason to believe that this particular route is less safe than routes to the other two sites.

The road between I-10 and Maricopa currently handles a number of heavy trucks daily, principally trucks carrying agricultural products and supplies. The additional truck traffic to the facility would be expected to add an average of only one to two trucks per hour. Also, the additional traffic is expected only during daylight hours, which would tend to minimize the risk of accidents.

The data presented in Tables 4-4 through 4-8 in the Draft EIS (DEIS pp. 4-19 to 4-25) show that other possible routes to the Mobile site from Phoenix and Tucson have higher recorded accident rates and accident probabilities than the Phoenix-Chandler-Maricopa-site route. The statistics for some of these routes are comparable to those for routes to the two alternative sites, while others are not. The statistical data, then, suggest that routing traffic along some of these other possible routes could pose a higher risk of transportation accidents.

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* This is because 75% of Arizona's hazardous waste is generated in the Phoenix area; also, most wastes coming from California (if any) would likely use I-10 through Phoenix.

In the comments on the Draft EIS, the possibility was raised that trucks transporting hazardous waste to the site might enter Rainbow Valley from the north across Tuthill Bridge and drive south through the Valley to Mobile. Presumably the trucks would enter the Maricopa-Gila Bend road at Mobile and travel six miles on that road to the site.

This route was not considered an alternative in the Draft EIS because of the tremendous cost of upgrading existing dirt roads over the distance involved. After the Draft EIS was published, the Arizona State Legislature amended ARS 36-2800 to require that access into the Mobile site be from the east or west on existing public roads. This would preclude use of this route because Tuthill Bridge and the Maricopa-Gila Bend road are not connected by "existing public roads."

Based on the costs of upgrading existing roads and the Legislature's action, ADHS prefers access from the east via the Maricopa-Gila Bend Road. It is expected that ADHS's preferred route would be specified in regulations ADHS will establish to govern transport to the facility.

Condition of the Roads. At present, the road between Maricopa and the site is an unpaved dirt road. Several comments indicate a concern over use of such a road for truck transport of hazardous waste.

Use of this road in its current condition could pose safety problems. Dust could cause visibility problems, and rain could make passage difficult or wash out portions of the road. According to ADHS, it would cost some $11 million to provide an all-weather surface over the 21 miles of unpaved road.

The Request for Proposals which ADHS issued for selection of a facility contractor contains a bid specification that requires the facility contractor to improve six miles of unpaved road along Maricopa Road. This improvement would provide an all-weather road from Mobile to the site.

At least part of the remaining portion of the road between Maricopa and Mobile would be paved by Provident Energy Company (PEC) if the company carries out its plans to build an oil refinery at Mobile. As a condition of PEC's air quality permit, ADHS has required that all regularly-used access roads be paved within 10 miles of the proposed refinery. The Maricopa County Planning and Zoning Commission also placed a requirement on PEC that the company establish the Maricopa-Gila Bend road as its access route and pave it to the nearest paved road. Since the nearest paved road is in Pinal County, however, it is not clear that Maricopa County's requirement could be enforced. Nine miles of the unpaved road lie within Pinal County.

At this time, there is no assurance that PEC would pave the entire road between Mobile and Maricopa. A final decision on whether the company will proceed with the proposed refinery is not expected until the first quarter of 1984. Even if the project does proceed, however, ADHS and Maricopa County requirements would provide for paving at most ten miles of the road. This would leave part of the road in Pinal County unpaved. The cooperation of Pinal County would be required to ensure this portion were paved.

Because of the uncertainties involved in the PEC project, ADHS is working with the Arizona Department of Transportation to determine options for improving the road. The final solution may require some legislative action. The following options are being discussed:

- DESIGNATE THE ROAD AS A STATE HIGHWAY. This option would require new legislation. ADHS would have to approach the State Legislature in an attempt to have the road designated as a State Highway. If approved, monies would be appropriated for the road improvement or the Arizona Department of Transportation would be instructed to utilize the State Highway Trust Fund or other appropriate fiscal mechanism to improve approximately 21 miles of road. The cost may be offset by establishing the road as a State Toll Highway.

- SHARE FISCAL RESPONSIBILITY AMONG MARICOPA COUNTY, THE STATE OF ARIZONA, AND PROVIDENT ENERGY COMPANY (PEC). Under this option, many funding schemes may be considered. Negotiation and inter-agency agreements would be required. ADHS would also have to approach the State Legislature for amended legislation and appropriations for funding the State's share of the road improvement costs. A firm committment by PEC on construction of the oil refinery would also be required.

- LET PRIVATE INDUSTRY HANDLE ROAD IMPROVEMENT. Under this option, the six miles of road between the Mobile site and the unincorporated Town of Mobile would be improved by the facility contractor and PEC would improve the road from Mobile to the boundary between Maricopa and Pinal Counties. Even if PEC improved this ten-mile section of the road (as discussed earlier), this would still leave several miles of unpaved road in Pinal County.

ADHS intends to resolve this problem before final contract negotiations with the selected facility contractor are completed.

Pipeline Road. El Paso Natural Gas Company (EPNG) submitted comments noting that co-use of patrol roads and right-of-way along its buried pipeline could not be permitted for safety reasons and to protect the pipeline. This comment apparently refers to the pipeline road that crosses Rainbow Valley, connecting Mobile with roads at the northern end of the Valley. Use of this road for hazardous waste transport, however, has been effectively precluded by the State Legislature's recent amendments to ARS 36-2800. The amendments limit access routes to the Mobile site to existing public roads approaching from the east or west. The pipeline road does not meet these criteria.

It should be noted that the likely access route (Maricopa-Gila Bend Road) crosses the pipeline near Mobile. EPNG has commented that the company will have to review and approve plans for crossing its pipeline to determine the need for additional pipeline protection. ADHS has agreed to work with the facility contractor and other government agencies to ensure that EPNG is provided the information it needs to conduct such a review.

Risk to Schools. The Draft EIS points out that two schools are on potential access routes to the Mobile site. One is the Mobile Elementary School, located on the Maricopa-Gila Bend Road 6 miles east of the site. The other school is located in Maricopa.

It should be noted that the school in Maricopa is situated along one of the possible routes for waste shipments from the south or west. Trucks coming through Stanfield and approaching Maricopa from the south would be expected to pass this school. This would represent only a small percentage of the waste shipments going to the facility. Also, traffic could be routed onto an alternative access route to avoid this school. This is a factor which ADHS should address in its transportation regulations.

The Mobile School, on the other hand, is located such that all traffic approaching the site through Maricopa (the preferred route) would pass by. Consequently, the school should be considered a "special population at risk" as stated in the Draft EIS. It is difficult to estimate the precise risk to this population, however. As noted earlier and in the Draft EIS, the probability of an accident involving a hazardous waste truck is very low. Also, the number of trucks would be small (an average of one to two per hour).

The chance of an accident involving a spill of hazardous waste near the school is even smaller, given that not all hazardous waste truck accidents involve a release of wastes. It should also be noted that the school is already at some risk from the SP Railroad, which passes within approximately 500 feet of the school and carries several thousand carloads of hazardous materials each year.

While the transport of hazardous materials on the railroad presently places the school at risk from a spill, it is clear that the addition of hazardous waste transport traffic would increase that risk to some extent. Consequently, measures would need to be taken to minimize that additional risk. Possible measures are discussed at the end of this section.

Risk of a Spill at the Facility

The Draft EIS estimates that 0.5 spills per year could take place at the facility in the course of its operations (DEIS page 4-17). This estimate is derived from the operating experience of a California facility at which it was estimated that one on-site spill occurred for each 10 million gallons of waste delivered to the facility. This figure is used only to present a general indication of the likelihood of spills. Actual experience at the proposed facility would depend on a variety of factors.

One comment on the Draft EIS asks for information on the spill experience at "a similarly designed plant currently in operation." In general, events such as leaks, spills, emissions, and their effect on public health and the environment are more likely to be functions of the operator, and the care taken during site construction and operations, than functions of the site design. Some similar facilities have exemplary safety records, while others have been plagued with problems. There is no way to generalize from the experience at other facilities.

On the other hand, it is possible to imagine a spill scenario from which a projection of impacts could be made. A discussion of such a scenario follows.

Hazardous Waste Spill Scenario

In response to comments on the Draft EIS, an effort has been made to characterize the emissions and associated ambient levels of two volatile organic compounds spilled in an accident. In this scenario, a truck carrying 5,000 gallons of hazardous waste overturns.

In order to create a "worst-case" scenario in terms of an immediate danger to exposed persons, the following assumptions and considerations are used:

- Two very volatile compounds, benzene and methylene chloride, have been selected. These compounds could be released rapidly into the atmosphere under the conditions selected.

- The entire amount of each compound is assumed to spill immediately, and to be distributed in a "puddle" that is only 1 inch deep.

- A very high concentration (90% by volume) of these two compounds has been assumed. In reality, hazardous waste shipments are not likely to contain this high a concentration of the hazardous constituent. The emissions calculated in this scenario, then, are likely to be higher than those experienced in an actual waste spill.

The ambient levels of the two substances at given distances from the spill are given in Table IV-5 below. The calculations are presented in Appendix B.

These levels may be compared to two different exposure limits. The EEL (Emergency Exposure Limit) is defined as:

> ...a short term exposure limit which is used in an accidental release of a toxic chemical... [EELs] were established by the National Academy of Sciences-National Research Council Committee on Toxicology. Concentrations are such that reversible toxic effects and discomfort, short of actual incapacitation, may well occur (23).

An EEL for benzene could not be found at the time of this writing, so IDLH (Immediately Dangerous to Life and Health) concentrations for both compounds are also presented (24). The IDLH concentration represents a "maximum level from which one could escape within 30 minutes without any escape-impairing symptoms or any irreversible health effects" (24).

The EEL for methylene chloride is 7.08 grams per cubic meter (g/m^3) or 2000 parts per million (ppm). The IDLH for benzene is 6.5 g/m^3 (2000 ppm); for methylene chloride, 17.8 g/m^3 (5000 ppm).

Table IV-5 shows that a 5,000 gallon spill of either benzene or methyl chloride (at a 90 percent concentration) would pose an immediate health hazard to exposed persons within 100 meters (328 feet) of the spill. Levels of these toxic chemicals would fall well below the exposure limits at a distance of 500 meters (1640 feet). Based on these data, it is reasonable to assume that the exposure limits would be exceeded, thus posing a significant immediate hazard, within about 1,000 feet of the spill.

Emergency Response

Some commenters raised concerns about the ability of the State and local governments to respond to hazardous waste spills. In discussing emergency response capabilities, the Draft EIS notes a number of areas in which lack of resources could prevent prompt, adequate response (see DEIS pp. 4-28 and 4-29). It should be clarified, though, that Arizona does have an operating state emergency response system. This system was set up to handle the current problem of hazardous material spills. Spills

Table IV-5. Impacts of spills involving benzene and methylene chloride*

	Ambient Level (g/m^3)	
Distance from Spill	Benzene	Methylene Chloride
100 meters (328 feet)	8.0	27.0
500 meters (1640 feet)	0.90	3.05
1 kilometer (3280 feet)	0.33	1.17
5 kilometers (approx. 3 miles)	0.033	0.01
10 kilometers (approx. 6 miles)	0.013	0.005

* See text and Appendix B for a discussion of the assumptions used in making these calculations.

in the State have prompted use of the system in the past. It is expected that hazardous waste spills would be handled under the same system.

The State's emergency response system uses existing personnel at the State and local levels. These personnel are publicly funded to respond to a variety of incidents including fire control, transportation accidents, crime, natural disasters, and the like. The State system supplements existing response capability by coordinating statewide communications, acquiring or providing access to equipment, and training personnel.

The response system is designed to function as follows:

- Local emergency response personnel respond first on the scene and take protective actions.

- If the incident exceeds the capability of the local emergency personnel, the Arizona Department of Public Safety (DPS) is called in to coordinate the State response.

- In either case, DPS, ADHS, and other pertinent agencies provide the expertise in containment and clean up.

It should be noted that in the case of a transportation accident involving a spill of hazardous waste or material, the clean-up costs are paid by the shipper and/or generators of the material. In the case of an on-site spill at the facility, the facility operator would be responsible for the clean-up costs.

Mitigation Measures

Mitigation of the potential environmental impacts of hazardous waste spills involves:

- measures to minimize the possibility of a spill occurring; and,

- measures to ensure that emergency response personnel promptly and effectively respond to and clean up spills that do occur.

The Draft EIS discusses a number of measures which would be taken to meet these two goals (see DEIS pp. 4-24, 4-27, 4-29, and 4-30). Because this is an area of significant concern, the following discussion is included to add to the discussion in the Draft EIS regarding transportation spills. On-site spill prevention and response measures would be addressed in the facility permit. (See Section V.)

Measures to Minimize Spill Occurrences

The primary means of avoiding problems in the transport of hazardous materials or hazardous waste are safe packaging and transport practices mandated through Federal and State regulations. The Federal regulations, which have been adopted by Arizona to be its own State regulations, are briefly summarized in the Draft EIS (DEIS Appendix A, p. A-12).

In addition to the operating practices required by these regulations, transport safety is affected by the routes used. ADHS is required by law (ARS 36-2800) to develop rules and regulations governing the travel routes hazardous waste transporters would use within the State. Information contained in this EIS concerning accident rates and population risk factors would be used in developing these regulations.

The regulations would also take into consideration special populations at risk, such as the Mobile School. There are several safety measures that could be required near the school, including stop signs, low speed limits, and warning signs.

ADHS's transportation regulations would be subject to public review and input. Further information on the plans for these regulations and ADHS's timeframe for developing them is presented in Section VI of this document.

Use of surfaced (all-weather) roads leading into the facility is another measure that would minimize the possiblity of spills. Under the terms of the Request for Proposals issued by ADHS, the facility contractor would be required to pave six miles of road from Mobile to the site. Since 5 to 6 miles of unpaved roads connect the two alternative sites with I-10, the same condition would apply at these sites.

As noted earlier, paving six miles of road at the Mobile site would still leave some 15 miles of dirt road between Mobile and Maricopa. ADHS is working with Provident Energy Company, Maricopa County, and the State Department of Transportation, to develop a workable plan to pave that portion of the road. There is no assurance, though, that this would be accomplished without legislative action.

Spill Response Measures

Plans for upgrading the State's emergency response system are briefly discussed in the Draft EIS (DEIS pages 4-27 and 4-28). Experience with hazardous materials spills suggests that, in spite of a need for more resources, the system is working and adequate response to spills is taking place. Some of these spills have taken place along the hazardous materials transport routes near the proposed sites, indicating that hazardous waste spills could also be responded to.

At present, State personnel are working to improve the emergency response system. Their attention is focused on coordinating specialized emergency response services out of Phoenix, and on training personnel at the local level.

Pipeline Protection Measures

ADHS has noted EPNG's comments regarding the need for EPNG to review plans for crossing its pipeline to determine whether additional protection is needed. ADHS would work with the Maricopa County Highway Department, the Arizona Department of Transportation, and the facility contractor to ensure that road improvement plans are reviewed by EPNG. ADHS would ensure that the facility contractor provides specific information on vehicle weights and axle loads.

PCB Transportation Outside Arizona

Development of a PCB incinerator in Arizona could alter the current pattern of PCB shipments in other western states. To ensure that state and local emergency response authorities are aware of potential changes and take them into account in their emergency response planning, EPA would notify the lead agency for emergency response in each affected state if the facility is issued a PCB disposal permit.

PUBLIC HEALTH AND SAFETY: VALLEY FEVER

Testimony at the public hearings on the Draft EIS returns to the continuing concern of Rainbow Valley residents over the potential for spreading Valley Fever (See DEIS pp. 4-30 and 4-31, and DEIS Appendix H). Some comments indicate the DEIS may give an erroneous impression of the risks of Valley Fever in the area of the proposed Mobile site.

While it is true that Valley Fever spores may be transmitted over long distances by high winds, the appropriate question at this point is one of significant impacts. The Arizona Lung Association estimates that two-thirds of all adults who have lived in the Valley Fever areas of the southwestern U.S. have been infected with the fungus which causes the disease and have thereby acquired an immunity to further infection (25). Very few cases progress beyond the so-called primary stage of the disease and most people who are infected are not aware of the infection, unless they have skin tests, as they have no symptoms (25, 26). A small percentage of cases may progress to the secondary (or disseminated) stage and result in serious illness (25, 26, 27).

It is not known precisely how far spores may be carried by the wind. In one incident, infectious spores to travelled as far as 500 km (310 miles) in a major dust storm (27). (This event is discussed in the Draft EIS, Appendix H, pp. H-3 and H-4.) The disease spores are endemic to large areas of the southwestern U.S., including the areas surrounding the proposed site and both alternative sites (25, 26). Under certain weather conditions, construction or operational activities at the sites could cause the spores to be spread to the Phoenix area unless mitigative measures were in effect. (See DEIS Appendix H.)

Opinion differs on the significance of the health risk that would be posed by release of the spores. Available data reviewed during this study suggest that the combination of previous exposure of local residents and the limited probability of serious complications limits the significance of the potential spore releases. On the other hand, one Valley Fever expert who has commented on the Draft EIS, Dr. Chester Leathers of Arizona State University, has expressed a great concern for the health and safety of facility construction workers, nearby school children, and residents living "within a radius of approximately 50 miles of the proposed site" (Section VI, Written Comments, Comment #W-56).

EPA believes that ADHS should strive to produce a margin of safety in implementing the mitigation measures described below. Dr. Leathers' expert opinion should be sought on whether measures taken by ADHS or the facility contractor are appropriate.

Mitigation Measures

As indicated on p. 4-31 of the Draft EIS, ADHS is committed to working with the facility contractor to minimize the disturbance and dispersal of Valley Fever spores which may be present at the Mobile site. Mitigation measures may include:

- minimizing the area of soil disruption during facility and road construction.
- sampling soils to identify areas of especially high spore density. Appropriate mitigation or avoidance would be taken in such areas.
- confining soil-disturbing activities to periods of low wind velocity. This would reduce the potential for distributing airborne arthrospores.
- landscaping and periodically watering the soil (or using chemical dust suppressants) to reduce dust.
- requiring the contractor to consult with experts on the best practical control measures.
- monitoring health records for the area for indications of Valley Fever problems.
- where appropriate, using face mask respirators to safeguard occupationally exposed individuals.
- disseminating information on exposure risks to the construction workers, especially regarding the practice of carrying contaminated clothes to their residences.

The facility contractor would be responsible for implementing most of these control measures. ADHS would be responsible for some soil sampling and monitoring of health records, in coordination with the facility contractor. ADHS plans to undertake a a study to determine the impact of the hazardous waste facility on disease development in the area. This study is part of ADHS's commitment to monitoring the health of residents in the Mobile area.

SOCIOECONOMICS: "QUALITY OF LIFE" CONCERNS

In considering "quality of life" effects, the Draft EIS notes that residents in the vicinity of the proposed facility may experience anxiety over potential harm to public health or other potential impacts of the facility. A recent survey of Rainbow Valley and Mobile area residents has identified a high level of concern among survey participants. The survey report, prepared by Mr. Kenneth Bachrach, was entered into the public records at the hearing on the Draft EIS. Because of the level of concern expressed by Mobile and Rainbow Valley area residents, the Bachrach study has been reprinted here.

Mitigation Measures

As this EIS has noted, the facility's hazardous waste permit (and the PCB permit, if applicable) would include provisions to protect against contamination of ground water, surface water, and air. It would also include requirements that the permit be amended if the operator were to plan significant changes in facility operations or in the types and amounts of wastes handled. Survey participants, as well as other interested citizens, would have an opportunity to review and comment on the permit provisions.

Partly in response to Mr. Bachrach's study, the Director of ADHS has committed the Department to gathering baseline health information in the Mobile area and to monitoring the health of area residents throughout construction and operation of the facility. This health monitoring program, together with the permit conditions, may help to address the concerns expressed by survey participants regarding the potential health risks associated with the facility.

REPORT ON THE CONCERNS OF RAINBOW VALLEY AND MOBILE RESIDENTS REGARDING THE PROPOSED HAZARDOUS WASTE DISPOSAL FACILITY

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Introduction

The purpose of this report is to communicate the concerns of local residents about the proposed hazardous waste disposal facility. It is based on the August 1982 survey of the Rainbow Valley and Mobile communities.

This is not meant to be a technical report. Detailed information on sampling procedures, measurement reliability, and data analyses have been purposely omitted in the hope that this report will be readable and thus used. I will be happy to supply more technical information to interested readers.

The format I chose in which to present the results was to ask an important question and to then provide survey information which answers it. I have attempted to stick to the facts in answering these questions and to provide my personal viewpoints only at the end.

Summary and Overview

Residents were most concerned about water contamination, health hazards, and accidents arising from transporting waste. They were angry about the decision to locate the facility in their community, believed that there were better available sites, and viewed the decision as unfair. Residents perceived the facility as a threat to their well-being, anticipated few community benefits, and did not believe that the facility management would be responsive to community needs. Even though residents did not want the facility, most people thought it would be built. Should this occur, they viewed as most important the monitoring of their health and the establishment of better medical facilities and emergency systems. A strong adversarial relationship exists between the local community and the state government, which will likely create problems for both residents and governmental officials. It is recommended that representatives of the state and local community begin a dialogue to improve relations.

How was the survey conducted?

People who participated in the August 1982 survey about the proposed hazardous waste facility were selected one of two ways. Seventy people were chosen at random from a specially developed map of Rainbow Valley and Mobile. This map was quite accurate, with the exception of some homes in Deep Rainbow Valley not being included. Interviewers alternated speaking to the male and female head of household. Twenty-nine residents were selected at random from a list of people who had attended meetings or voiced their opinion on public record about the hazardous waste facility. Thus, a total of 99 people were interviewed in their homes, with only 7% of those contacted refusing to be interviewed. The median time per interview was 35 minutes.

1/83

What were the characteristics of the people surveyed?

Most of the people surveyed were Caucasian (82%), married (84%), and high school graduates (73%). They had lived an average of 8 years in the area, and slightly more than half were female (52%). The average age was 41 years, but there was a fairly equal distributon across age groups. For example, 36% were under 35 years and 37% were 45 years or older. The median family income was $21,000, with one-quarter of the families earning under $13,000 annually and one-quarter earning over $28,000. Sixty-three percent were employed full- or part-time, 7% were retired, 19% were homemakers, and 8% were unemployed.

How do people feel about the facility being built?

Eighty-five percent of the sample reported they were either concerned (34%) or upset (51%) when they learned that a hazardous waste facility might be built. Most people believed the decision to locate the facility near Mobile was either unfair (33%) or very unfair (49%), and viewed Governor Babbitt, the State Legislature, and certain politicians as responsible for the decision. Half of those interviewed were either angry (20%) or very angry (30%) about the decision and generally did not see themselves becoming less angry over time. Still, over half of those interviewed (54%) see themselves accepting the fact that the facility may be built, and two-thirds of the sample believe that it is either likely (18%) or very likely (44%) that the facility will be built.

What are the major concerns of residents?

Near the start of the interview people were asked the question, "Specifically, what are your feelings and opinions about the proposed facility?", and up to four responses per individual were recorded. Many responses fell into similar categories and are presented below.

43%	Water contamination
33	Better/other sites/in more isolated areas/away from people
24	Health hazards
23	Transportation hazards/accidents
13	General safety concerns
12	Waste/chemical leakage
11	Don't like it/against it/here
10	Air pollution
8	Lower property value
7	Site selection a political decision
6	Need a site
6	Good/ideal site/if built right

Do residents expect future problems with the proposed facility?

Residents view the facility as a threat, are distrustful of those who may manage the facility, and believe few community benefits will come from it. Examples follow to support each of these statements.

	Agree or Agree Strongly	Disagree or Disagree Strongly	Don't Know
(1) FACILITY VIEWED AS A THREAT			
The likelihood of an accident occurring is extremely slight	16%	73%	11%
There will be a high potential for ground or surface water contamination	81%	6%	12%
People will face a greater risk of becoming sick	69%	18%	13%
The facility represents a threat to my well-being	70%	22%	8%
(2) DISTRUST OF FACILITY MANAGEMENT			
Public complaints on the facility's operation will be investigated promptly	25%	65%	10%
The public and local community will be advised of changes in operations and types of waste handled at the facility	15%	78%	7%
A good working relationship will develop between local residents and the facility operator	15%	72%	13%
(3) FEW COMMUNITY BENEFITS EXPECTED			
Fire and emergency systems in the community will be improved	25%	55%	19%
Better medical facilities will be provided for the community	15%	69%	16%
The facility will generate tax dollars for the community	26%	52%	22%

What compensation or community benefits do residents feel would be most important, should the facility be built?

Residents were asked to rank order seven statements, with "1" being most important and "7" being least important. As can be seen below, the statements relating to health and health care were most important in the minds of most people.

		Average Ranking
1.	The health of residents should be regularly monitored.	2.51
2.	Better medical facilities should be provided for the community.	3.09
3.	Fire and emergency systems in the community should be improved.	3.20
4.	Some type of compensation should be provided to residents affected by the facility.	3.66
5.	Access roads should be improved (e.g., paved) and widened.	4.61
6.	Employment opportunities for local residents should be provided.	5.43
7.	The facility should generate tax dollars for the community.	5.44

Did people selected from the list of residents attending meetings differ from those selected at random from the community?

The two groups differed in some respects but not in other ways. The "actively involved" group tended to be older (51 years vs. 37 years) and to have lived longer in the community (12 years vs. 7 years). They had a stronger sense of community, were more likely to believe they could do something about the facility being built, and had known that the facility might be built for a longer period of time (2 years vs. 1 year).

While most residents of both groups were opposed to the building of the facility, the actively involved group's opposition was more intense. They tended to be "upset" when they learned the facility might be built, while the rest of those interviewed were more likely to respond "concerned." They believed the decision to build the facility near Mobile was "very unfair" while others viewed it as "unfair." Similarly, those actively involved were generally "angry" over the decision to build the facility compared to "somewhat angry" for the rest of the sample.

There were no significant differences between the two groups on many measures. Similar proportions of each group owned their homes and believed that property values would decrease. Both groups equally believed that the facility will probably be built and that good relations are not likely to develop between the local community and facility operator. A very important finding was that both groups ranked the seven community benefit or compensation items in a similar fashion, viewing the monitoring of health and better health care facilities as most important.

Discussion

The results paint a strong adversarial relationship betwen the community and governmental institutions. The community does not trust the state government as evidenced by perceptions that (1) politicians were responsible for the decision to locate the facility near Mobile; (2) the decision was unfair; and (3) facility management cannot be trusted. Furthermore, residents viewed the facility as a threat to their well-being and expect few community benefits. In a nutshell, the community is saying that it has little to gain and potentially much to lose as a result of this facility.

Even though local residents do not want the facility, the majority of them believe that it will be built in their community. This suggests that residents do not believe that they can do much about the present situation, which could produce cynicism, anger, and a sense of powerlessness among many people.

A continuation of this adversarial relationship does not appear beneficial to any of the parties involved. If the community does not feel it can trust the State or the facility operator, this will undoubtedly increase distress among local residents once the building of the hazardous waste facility begins; for if they cannot trust the party monitoring the safety of the facility, to whom can they turn? The state government has little to gain by having its credibility questioned continuously by local residents. Furthermore, such criticism does not remain a local issue but spreads via the media. Similarly, the facility operator will likely be backed into a corner, having to frequently defend its actions to people looking for mistakes.

A reconciliation among the parties will not be easily achieved. The local community has fought hard to stop the building of the facility and 46% of the residents still do not see themselves accepting the fact that the hazardous waste facility will be built. Hazardous waste disposal is not a popular subject among politicians. Since few communites want hazardous waste facilities, discussion usually centers on where not to place them rather than on how to deal with the problems of hazardous waste. State agencies, such as the Department of Health Services, are often caught in the middle, because they are influenced by legislative decisions which tell them what to do and limit their resources.

There is no simple solution, but a dialogue between representatives of the State and the local community would be a step in the right direction. Many issues must be sincerely dealt with and resolved if relationships are to improve. The overriding issue may be one of justice and fairness. Few people want a hazardous waste facility located near them. Should those who must assume more than their fair share of the social cost of hazardous waste production receive something in return? It is interesting to note that local residents viewed as most important the monitoring of their health and better medical facilities, not monetary compensation or employment opportunities. These seem to be reasonable requests and are worthy of lengthy discussion.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Water and energy resources are addressed briefly in the Draft EIS's discussion of the "irreversible and irretrievable commitment of resources" associated with the proposed facility (DEIS p. 4-50). Both resources were the subject of comments on the Draft EIS. The following additional information has been provided in response to these comments.

Water Use

Potable water would be needed primarily for drinking, showers, eye-washes, and laboratory facilities. Non-potable water could be used for purposes such as vehicle washing facilities, irrigation, dust control, and fire protection. Typical potable water requirements are on the order of 35 gallons per shift. Total water needs are estimated to be 35 gallons per minute (averaged over a 24-hour period) for a "low technology" facility such as the one described in the Draft EIS (DEIS Appendix D). Water needs for a facility with a high-temperature incinerator would be higher, in the range of 100 to 150 gallons per minute (gpm).

Although water could be delivered to the site from off-site water sources, the most likely source is ground water beneath the site. Some non-potable water needs could be met through use of neutralized waste waters, but the amount is not known at this time. Given the high cost of obtaining either ground water or water from off-site sources, it is likely that the facility operator would make every effort to conserve water and reuse suitable waste waters.

Available ground water in the Rainbow Valley area is limited. However, the water needs of the proposed facility are reasonable compared with other water users. At a maximum rate of 150 gpm, the facility would require about 200 acre-feet per year. Based on ground water data from the eastern and northern parts of Rainbow Valley, where ground water use is highest, it is estimated that the 210-square mile Waterman Wash area contains approximately 10.3 million acre feet of ground water. Current irrigation requires about 72,000 acre feet (28). It is not known whether ground water lies beneath the proposed site or, if it is present, whether it is recoverable. The facility contractor would have to do exploratory drilling to determine the level and sufficiency of ground water at the site. Should ground water not be found, the facility operator probably would have to pipe water in from a well off-site. Unless an existing well could be used, the operator would have to develop the well (or wells) in addition to the pipeline, and would have to obtain right-of-way agreements with BLM and other property owners along the pipeline route.

Information on ground water availability in the Western Harquahala Plain and Ranegras Plain areas is very limited. Stock wells near the Western Harquahala Plain site pump ground water at a rate of 25 to 30 gpm. An irrigation well about 13 miles east of the site draws 3,000 gpm. A stock well on the Ranegras Plain site draws about 20 gpm, while a well a few miles to the south pumps about 35 gpm. Irrigation wells roughly 10 miles north of the Ranegras Plain site draw 2600 to 3500 gpm.

While accurate judgements about the quantity of ground water available over the life of the facility cannot be drawn from these data, they do indicate that wells near the two alternative sites can pump water at a rate that would meet the facility's maximum estimated water needs. Clearly, wells of a larger diameter than the stock wells in the area would be needed.*

As with the Mobile site, further site investigation would be needed to determine the sufficiency of the ground water supplies beneath these sites. The presence of a stock well at the Ranegras Plain site confirms the presence of recoverable water (at least in one part of the two-section area considered for the proposed site). There is no information confirming the presence of ground water at the Western Harquahala Plain site at this time. There are, however, operating stockwells within 2 to 3 miles of the site in three directions.

ADHS has asked the Department of Water Resources to consider the proposed waste facility's water needs in allowing other ground water permits in the basin. This should help ensure that adequate water is available to meet the needs of the facility and of others planning to use water in the area.

Energy Consumption

Electrical Power Requirements

The Draft EIS notes that "energy consumption at the facility would be minimal" (DEIS p. 4-50). This statement is based on the "low technology" representative design used as the basis for preparing the Draft EIS. Since the Draft was issued, additional information has become available on expected energy requirements of both a "low technology" and a "high technology" facility.

The peak energy load for a facility without incineration is expected to be around 200 kilowatts (kw) (7). The needs of a facility with an incinerator would be higher: a peak load of approximately 450 kw for the incinerator, and probably an additional 50 percent for the other facility operations (3).

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* These stock wells would have a diameter of 5 to 6 inches, while the irrigation wells would have a diameter of about 20 inches.

At the Mobile site, existing power lines would have to be extended for approximately seven miles. While the exact cost of extending the line and providing the needed circuits at the site cannot be determined until the facility is designed, a rough estimate from the Arizona Public Service Company indicates a minimum cost figure of about $30,000 per mile (total minimum cost of $210,000) (29).

The costs per mile of extending a line to the Western Harquahala Plain or Ranegras Plain sites would be similar, about $30,000 per mile at a minimum. A line crosses the corner of one of the sections at the Western Harquahala Plain site; consequently, the extension could be less than one mile, depending on which section was selected and where the facility was located within the section (29). An extension to the Ranegras Plain site would have to cover some 14 miles. Such an extension could cost at least $400,000 (29).

A facility which includes an incinerator might require more power than existing lines in remote rural areas could provide. Consequently, while the Western Harquahala Plain site appears to have the lowest potential cost for extending the existing power lines, the cost would be significantly higher if the line needed to be reconductored to increase its load capacity. Additional information on the facility's design and specific energy requirements would be needed to determine whether reconductoring were needed and to estimate the costs involved (29).

Because the cost of extending the transmission lines could be quite high, the facility operator may choose to develop a power source on-site. At the "high technology" facility, excess energy from the incinerator could be used to meet part of the facility's power needs through co-generation of electricity. The amount of energy which could be generated this way has not been determined by the bidder (30).

Motor Fuel Consumption

The Draft EIS notes that transporting hazardous wastes to the site could result in a net savings in terms of fuel consumed, over transporting the same amount of waste to existing out-of-state facilities. The Draft EIS estimates that over 8,300 gallons of gasoline would be consumed monthly in transporting waste to the Mobile site, while nearly 10,000 gallons would be consumed monthly in transporting waste to the Western Harquahala or Ranegras Plain sites.

An error was made in calculating fuel consumption to the Mobile site, overestimating fuel consumption by over 3,000 gallons per month. (See DEIS p. 4-50.) Based on transportation estimates used in the Draft EIS, the correct figures would be about 5,100 gallons per month, or nearly 66,000 gallons per year. Table C-2 (Appendix C) shows the calculations for annual fuel consumption. This table also shows fuel consumption estimates for transporting the same waste to the nearest out-of-state waste site.

For wastes generated within Arizona, the greatest savings would come from using the Mobile site -- approximately 280,000 gallons per year. The savings from using the Western Harquahala Plain or Ranegras Plain sites -- 230,000 gallons annually -- would also be significant.

As noted earlier, a PCB incinerator located in Arizona would be expected to attract PCB wastes from a number of western states. Table C-3 (Appendix C) compares the total one-way mileage involved in shipping PCB wastes to an existing incinerator in El Dorado, Arkansas, and to the proposed Arizona facility sites.* The table is based on estimates of the number of shipments from major western cities which are likely to be attracted to an Arizona facility.

Table C-4 (Appendix C) shows the fuel that would be consumed in shipping wastes to the proposed Arizona facility and to the existing facility in Arkansas.* About 138,000 gallons would be saved annually by shipping to the Mobile site, while 154,000 gallons would be saved by using a facility at the Western Harquahala Plain or Ranegras Plain sites.

Considering both hazardous waste and PCB shipments, locating the proposed facility at the Mobile site would likely result in a slightly greater overall fuel savings than would locating the facility at either of the other two sites.

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* Only the incinerator in Arkansas is considered in Tables C-3 and C-4, since there is not sufficient information available on current shipments to the Texas facility to estimate total mileages. Both facilities are about the same distance from Arizona. The tables assume that no other PCB incinerators are developed closer than these two facilities which would reduce the number of PCB shipments going to Arizona.

SECTION V

MITIGATION MEASURES

The Draft EIS explains that the proposed hazardous waste facility would be required to have a State or Federal permit, or both, in order to operate. The permit (or permits) would establish the design and operating requirements the facility must meet to ensure adequate protection of human health and the environment. As noted in the Draft EIS, many of the potential environmental impacts associated with the facility would be addressed in the permit.

A number of impacts have been identified, however, which are outside the scope of the hazardous waste facility permits. One major area of concern is transportation of waste to the facility. Many of the transportation-related impacts could be addressed through regulations which ADHS is required to issue by State law (ARS 36-2800). For other impacts, appropriate mitigation measures have been identified.

A summary table showing the impacts and the measures which would mitigate them appears at the end of this section. Preceding the table are discussions of the facility permit requirements and of the procedures ADHS will follow in developing its transportation regulations.

THE FACILITY PERMIT REQUIREMENTS

Appendices A and B of the Draft EIS summarize the Federal and State hazardous waste regulations and facility permit requirements. The Appendices do not cover all of the regulatory requirements, but highlight many of the major ones. Their purpose is to illustrate ways in which the regulations and permit conditions would address environmental concerns related to the design and operation of the facility.

In response to comments on the Draft EIS and to clarify portions of DEIS Appendices A and B, we have included the following discussion of facility permits and regulations.

State and Federal Permits

The proposed facility would have to meet the same permit requirements as other facilities which treat, store, and dispose of hazardous wastes. Currently, a new hazardous waste facility in Arizona must obtain both a Federal permit from EPA and a State permit from ADHS before it will be allowed to operate.

As described in Appendix B of the Draft EIS, an agreement betweeen EPA and ADHS allows the two agencies to work together in processing the State and Federal permits. Since a facility must have both permits, a decision by either ADHS or EPA to deny its permit would prevent the facility from operating.

Federal law allows EPA to transfer full responsibility for the hazardous waste management program to individual states. Under this provision, a state may be authorized to issue hazardous waste facility permits in place of an EPA-issued Federal permit. If Arizona were to become authorized, the State's own permit would be the only approval needed in order for the facility to operate as a hazardous waste disposal facility.* EPA may review and comment on draft permits, but the State would retain responsibility for issuing the final permit.

Arizona is presently developing regulations needed to obtain "authorization" from EPA to run the Federal program in the State. Its current schedule calls for the State to complete the authorization process and become authorized in 1985. Since the schedule for developing the proposed facility calls for completion of the permitting process during 1984, it is expected that the facility would have to follow current procedures and obtain both a State and a Federal permit.

If, however, permitting of the proposed facility were not to take place until after the State is authorized, ADHS would have sole responsiblity for issuing its hazardous waste facility permit. As the Draft EIS notes (p. B-3), this places ADHS in the dual role of regulator of the facility and co-applicant for the permit (as owner of the land leased to the operator). The Draft EIS states that ADHS intends to resolve the potential conflict presented by its dual role by entering into an agreement with EPA to have EPA issue this particular permit. Further review of the Federal legal requirements since the Draft EIS was issued, however, indicates that such an arrangement could not be made. Once the State is authorized, EPA will not have authority to issue a permit to the proposed facility.

This situation is not likely to occur, given the State's current schedules for authorization and for developing the proposed facility. If it did occur, EPA would retain the right to review the permit conditions and comment on them (but not to issue the permit in place of ADHS). ADHS would agree to accept, or justify its rejection of, EPA comments and recommendations, including a recommendation to deny the permit if this were recommended.

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* Other approvals, such as air or water pollution control permits or local zoning or construction approvals, might be needed in addition to the hazardous waste permit.

If the proposal to develop a PCB incinerator were accepted, the facility would need an EPA permit to dispose of PCBs. This woudl be in addition to its hazardous waste permit. Permitting of PCB facilities cannot be delegated to a state. The PCB permit is briefly discussed later in this section.

Mitigative Effects of Permit Conditions

Conditions established in the facility permit may address some of the potential impacts identified in the EIS. These conditions would be based on the Federal regulations (40 CFR Part 264). While much of this information is covered in Appendix A of the Draft EIS, it is presented here in a format that ties permit conditions to specific types of impacts. Since ADHS uses the Federal regulations as guidance in preparing State permits, the conditions applied in the State permit would be similar to those described here. (One difference between the State and Federal permit requirements is discussed under Air Quality in this Section and in Section IV, Air Quality.) Additional mitigation may be provided depending on the potential environmental impacts of the actual facility design and the specific conditions imposed by the permit.

Physical Setting

Earthquakes. The EPA regulations contain a seismic standard which prohibits placement of hazardous waste treatment, storage, and disposal units within 200 feet (61 meters) of a fault which has had displacement in recent geologic time (Holocene time). In certain designated areas which are known to contain such faults, the facility owner or operator must demonstrate that the facility meets this requirement. Facilities in areas without known Holocene faults are presumed to meet this standard because of their geographic location.

Maricopa County is not one of the designated areas; consequently, a facility at the Mobile site would be presumed to meet the earthquake standard and would not have to demonstrate compliance. Yuma County, however, is a designated area. Recently, the new County of La Paz has been formed out of the northern part of Yuma County. Although La Paz County is not listed, EPA officials believe that facilities located within the county would have to demonstrate compliance with the standard because that area was part of Yuma County at the time the list was developed. Consequently, a facility located at either the Western Harquahala Plain site or the Ranegras Plain site would have to demonstrate compliance.

To demonstrate compliance with the standard, the operator would have to show either:

- that no faults which have had displacement in Holocene time are present, or no lineations which suggest the presence of such a fault within 3,000 feet of the facility are present; or,
- if faults (or lineations) which have had displacement in Holocene time are present within 3,000 feet of the facility, that no faults pass within 200 feet of the portions of the facility where treatment, storage, or disposal of hazardous waste will be conducted.

The presence of faults or lineations within 3,000 feet of the facility must be determined using published geological studies, plus aerial reconnaissance within a five-mile radius of the facility, analysis of aerial photos covering a 3,000 foot-radius of the facility and, if needed for clarification, a walking reconnaissance of the area within 3,000 feet of the facility. Lack of published data on faults at the two sites indicates that on-site studies would be needed to determine whether faults are present.

The presence or absence of faults within 200 feet of the facility units must be determined through subsurface exploration (trenching) within that area, unless a site analysis is otherwise conclusive. (See 40 CFR 122.25(a)(11).)

Geologic Conditions. The Draft EIS notes that limited available information indicates that the proposed and alternative sites' "general geologic conditions are generally suitable for development of the proposed hazardous waste management facility, provided the facility is designed to minimize contact between the wastes and the subsurface environment" (DEIS p. 4-2). EPA's ground water protection requirements are intended to minimize contact between the wastes and the subsurface. These requirements would be the basis for permit conditions. (See the discussion of ground water below.)

If there were a potential for subsidence at or near the site, the facility's contingency plan would have to include provisions for handling any emergencies caused by subsidence. (See the discussion of contingency plans on pp. V-9 and V-10.)

Water Resources

Ground water. The permit would establish conditions for the protection of ground water resources based on two sets of standards. The first set is preventive, aimed at minimizing the release of contaminants into the subsurface through facility design and operating standards. The second set of standards is corrective, providing that ground water be monitored to detect the presence of contaminants and that any potentially harmful levels of contamination which are detected be cleaned up.

The ground water protection provisions of the regulations and the options for meeting the requirements are discussed at length in Section IV of this document. Additional background information on the regulations is presented in the Preamble to EPA's Land Disposal Regulations, in the Federal Register of July 26, 1982 (47 FR 32274).

Surface water. EPA's facility regulations contain provisions to keep waters or other liquids flowing into the facility ("run-on") from entering the treatment, storage, or disposal units and to prevent the release of liquids from the units ("run-off"). Other requirements are intended to minimize the potential for washout of the facility due to flooding.

Surface impoundments (ponds) must be designed, constructed, maintained, and operated to prevent overtopping (the flow of liquids over the top of the containment structures). There are a variety of potential causes of overtopping of impoundments which would be addressed in the permit, such as overfilling by the operator, wind and wave action, rainfall, and run-on (e.g., stormwater flowing into the impoundments).

The regulations leave it to the permit applicant to show how the facility would meet this standard. One means is to construct dikes which provide a large amount of freeboard (space between the the top of the dike and the level of liquid in the impoundment). Operating practices, such as adjusting inflows and outflows to regulate the level of liquids in the impoundment or using automatic level controllers or alarms, would also help prevent overtopping when potential problems (such as unusually large storms) occur.

To reduce the possiblity that storm waters would enter waste piles, land treatment units, and landfills and cause contaminants to leach into the subsurface, each unit must have a run-on control system capable of preventing flow onto the active portion from the peak discharge of at least a 25-year storm.* To minimize hazards from run-off of contaminated liquids from a unit, there must be a run-off management system capable of collecting and controlling the volume of run-off resulting from at least a 24-hour, 25-year storm. The collection and holding facilities of both run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain capacity of the system.

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* It should be noted that this is a minimum standard. As the Draft EIS notes (DEIS p. A-9), ADHS believes the 100-year storm standard is more appropriate for conditions at the Mobile site and would require the facility contractor to meet that standard rather than the 25-year storm standard.

EPA recognizes the magnitude of the environmental consequences of a flood at a hazardous waste facility, the 100-year floodplain has been set as a standard for facility location and design. While the regulations do not prohibit a facility from locating in a 100-year floodplain, any facility situated in one must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood. For a new facility, this standard must be met unless the facility operator sets procedures which will cause the wastes to be removed safely, before the flood waters can reach the facility, to a location where the wastes will not be vulnerable to floodwaters. This latter option, however, probably would not be a viable one for a comprehensive treatment, storage, and disposal facility located in a desert environment which is subject to intense flash flooding.

The permit applicant must document whether the facility site is located in a 100-year floodplain. This documentation already exists for the Western Harquahala Plain and Ranegras Plain sites, in the form of Federal Insurance Agency (FIA) maps. As the Draft EIS notes (DEIS pp. 3-38 and 3-59), these maps show both sites well outside the 100-year flooplain in these areas (at Bouse Wash). For the Mobile site, no FIA maps yet exist. Consequently, the applicant must calculate the floodplain. The discussion of the floodplain location standard in Section IV addresses the difficulty in identifying a floodplain in the Mobile area. EPA and ADHS would have to determine an appropriate methodology for assessing the floodplain.

If the facility is in a 100-year floodplain at the Mobile site, the permit applicant must provide:

- an engineering analysis to indicate the various hydrodynamic and hydrostatic forces expected to occur at the site as a consequence of a 100-year flood; and,
- structural or other engineering studies showing the design of operation units (e. g., tanks, incinerators) and flood protection devices (e. g., floodwalls, dikes) at the facility and how these will prevent washout.

Air Quality

Wind dispersal of wastes. EPA's regulations require that operators of waste piles, land treatment units, and landfills control the dispersal of wastes by wind. The practices used to control wind dispersal, such as covers or wetting, must be described in the permit application.

Toxic emissions. Because information on air emissions from hazardous waste land disposal units is very limited and the problem appears to depend greatly on the type of wastes handled, EPA's regulations do not set standard controls on toxic air emissions. At the proposed facility, such emissions may be addressed through State regulations, which require that a hazardous waste facility have appropriate equipment and devices "adequate to monitor and control the escape of ... fumes and gases into the environment". (R9-8-1821) This is discussed further in Section IV, Air Quality.

Incinerator standards. While no federal regulations have been established to control emissions from waste piles, impoundments, land treatment units, or landfills (except wind dispersal controls), standards have been set for incinerators. These standards require that, where specified hazardous constituents listed in 40 CFR Part 261, Appendix VIII are present in the waste, an incinerator must achieve a destruction and removal efficiency of 99.99% for each of the principal organic hazardous constituents (POHC) designated in its permit. POHCs are specified from the list of hazardous constituents. They generally are those which are most difficult to incinerate and are present in large quantities or high concentrations in the waste.

The regulations also specify limits on the amount of hydrogen chloride and particulates which may be emitted. These two substances are by-products of the incineration process.

The permit specifies the wastes which may be burned and the operating conditions for those wastes. To indicate that the incinerator will meet the standards, the permit applicant must either:

- conduct a trial burn under conditions set by EPA for that purpose, or
- submit extensive data on the wastes to be burned (heat value, viscosity, hazardous constituents), a detailed engineering description of the incinerator, and information comparing the wastes and the facility's design/operating conditions with those at units for which burn data are already available. Other data may also be required.

These standards do not apply to incinerators which burn wastes which are hazardous only because they are corrosive, ignitable, or reactive. The facility may also be exempted if materials included on the hazardous constituents list are present in insignificant concentrations and would not pose a threat to human health and the environment when burned in the incinerator. Since listed hazardous constituents such as PCBs would be included in the waste stream of the incinerator proposed for Arizona, that facility would not be expected to qualify for these exemptions. Permit conditions for the treatment and disposal of PCB wastes are discussed at the end of this section.

Public Health and Safety: Operational Spills and Emergencies

The facility permit would contain several requirements designed to prevent spills, explosions, fires, and other emergencies. The requirements also are intended to minimize the impacts of any emergencies that might occur.

Proper Handling of Wastes. The permit would describe procedures designed to ensure the proper handling of wastes at the facility. The permit applicant must obtain chemical and physical analyses of the hazardous wastes to be handled. The analyses must contain all the information needed to treat, store, or dispose of the wastes properly in accordance with EPA's regulations. The permittee must develop and follow a written waste analysis plan to carry out this requirement. The plan must include the parameters for which each waste will be tested, testing and sampling methods, and frequency of the analyses. For an off-site facility, such as the proposed facility addressed here, the plan must identify waste analyses that waste generators have agreed to provide to the facility, and must specify procedures to be used to ensure each hazardous waste received at the facility matches the waste identified on the shipping manifest accompanying the shipment.

The permit would describe precautions the facility operator would take to prevent accidental ignition or reaction of ignitable, reactive, or incompatible wastes. Such wastes must be separated and protected from sources of ignition. The facility operator must also take precautions to prevent reactions which:

- generate extreme heat or pressure, fire, explosions, or violent reactions;
- produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
- produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;
- damage the structural integrity of the device or facility; or

- through other like means threaten human health or the environment.

Spills. The permit would include measures to prevent and respond to on-site spills or hazardous wastes. Measures to control run-off and flooding described earlier in this section would also serve as spill prevention measures. In order to minimize the chance for a transportation-related accident, the permit applicant must also describe measures to prevent hazards in unloading areas and identify traffic patterns, estimated number and types of vehicles, traffic lanes, access road surfacing and load bearing requirements, and traffic control signals on access routes into the facility. The facility must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

To ensure quick response to emergencies, the facility must have the following equipment (unless it can be demonstrated in the permit application that none of the hazards posed by the wastes handled at the facility could require a particular type of equipment):

- an internal communications or alarm system capable of providing immediate emergency instruction to facility personnel;

- a device such as a telephone or two-way radio capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams;

- portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

- water at adequate volume and pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems.

The facility must have adequate aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility (unless the permit applicant demonstrates that aisle space is not needed for any of these purposes).

The permit applicant must include as part of the application a contingency plan designed to minimize hazards to human health or the environment from fires, explosions, or unplanned releases of hazardous wastes or hazardous constituents to air, soil, or surface water. The plan, which must be implemented in the event of such an emergency, must:

- describe the actions facility personnel must take to respond to the emergency;
- describe arrangements made with state and local emergency response teams and contractors, local police and fire departments, and hospitals to coordinate emergency services;
- list all required emergency response equipment; and
- include an evacuation plan for personnel.

Ecological and Cultural Resources

EPA permits must be issued in a manner consistent with other Federal laws, including the Endangered Species Act, the National Historic Preservation Act, and the Indian Religious Freedom Act. While the findings of this EIS indicate that no protected species, historic sites, or Indian religious sites would be adversely affected at any of the three sites, the permit would provide an additional opportunity for review of these findings by appropriate agencies and the public. In addition, the permit would include a provision that the facility owner or operator must consult the State Historic Preservation Officer and take appropriate mitigation measures if any discoveries are made during construction and operation which would be protected under of these laws.

PCB Disposal Permit

EPA has developed regulations specifically controlling the disposal of PCBs (40 CFR Part 761).* These regulations require "approval" from the EPA Regional Administrator before any facility may dispose of regulated PCB wastes. EPA approval takes the form of permits issued to disposal facilities, which may either be incinerators or landfills. Liquids containing PCBs in concentrations greater than 500 parts per million, as well as capacitors containing 3 pounds or more of dielectric fluid, may only be incinerated or chemically treated. Other wastes containing PCBs are commonly incinerated, although they could be landfilled under conditions set in the regulations.

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* Oils and other liquids containing a PCB concentration of 50 parts per million or more are regulated under the Federal regulations. Other articles containing or contaminated by PCBs, such as capacitors, transformers, clothing, and soils, are also covered. See 40 CFR 761.60

Incinerators must meet certain combustion criteria to ensure adequate incineration of the waste materials. To obtain EPA approval, the facility owner or operator must submit a report which includes a facility description and design drawings, engineering reports or other information on the anticipated performance of the incinerator, information on sampling and monitoring equipment and facilities, and waste volumes expected to be incinerated. A trial burn may be required to confirm the ability of the incinerator to meet the requirements. A waiver from these requirements may be obtained if the owner or operator can document that operation of the incinerator will not present an unreasonable risk of injury to health or the environment from PCBs. Additional discussion of PCB incinerator requirements appears in Section IV, Air Quality.

A landfill which handles PCB wastes must meet several specific design and operating requirements, including the following:

- The site must either be located where the soils are relatively impermeable (such as areas with thick clay layers) or else the operator must install natural or synthetic liners.
- The site must have at least three ground water monitoring wells, samples from which must be analyzed for the presence of PCBs, and for other parameters.
- A leachate collection system must be installed and monitored monthly for quantity and physicochemical characteristics of the leachate.
- If the facility is located below the 100-year floodwater elevation, diversion dikes must be placed around the perimeter of the landfill with a minimum height equal to two feet above the 100-year floodwater elevation.

For a complete discussion of these and other landfill design and operating requirements, see 40 CFR 761.75.

The PCB facility permitting process would involve a public review process similar to that for a RCRA permit (see DEIS Appendix A, p. A-11). Generally, PCB permits involve a shorter public review period than RCRA permits (30 days rather than 45 days) and more limited public notice requirements. The proposed Arizona facility, however, would be both a hazardous waste facility and a PCB facility (if the incinerator proposal is selected by the State). In such a case, the RCRA hazardous waste permit and the PCB permit would be issued simultaneously, and the RCRA public review provisions would be followed for both permits.

ADHS TRANSPORTATION REGULATIONS

ADHS is required by State law (ARS 36-2800) to develop transportation regulations for the hazardous waste facility. These regulations will specifically address the routing of hazardous waste shipments to the facility and safety considerations for special populations at risk. At the present time, the Mobile Elementary School is perceived as requiring special consideration. Safety measures being considered include low speed limits and warning signs. ADHS will solicit public input on the regulations during the regulation adoption process.

ADHS expects to promulgate the regulations by mid-1984. In adopting the regulations, the Department will follow the procedures and time frames outlined below.

Activity	Date
Prepare Regulatory Needs Statement; Hold workshop to discuss statement and to receive input on regulatory issues	June-July, 1983
Prepare draft regulations	August
Give notice of public meetings on draft regulations	August-September
Hold public meetings	September
Prepare responsiveness summary and final draft of regulations; obtain Attorney General's approval	October-November
Prepare submittal for Governor's Regulatory Review Council (GRRC); begin notice of public hearings; appear before GRRC	November-January, 1984
Hold public hearings; prepare responsiveness summary and final regulations	January-March
Submit regulations to Attorney General for certification (allow 90 days)	March
Attorney General certification and filing with the Secretary of State	May-June

Filing regulations with the Secretary of State is the last step in the State's regulatory development process. The Bureau of Waste Control intends to combine development of the transportation regulations with the revision of the State's Hazardous

Waste Regulations, which is required by House Bill 2326, enacted by the State Legislature in the 1983 session. Promulgation of the transportation regulations may be delayed if revision of the hazardous waste regulations takes longer than the schedule outlined above, as may be the case. Nevertheless, the transportation regulations will be adopted before the State hazardous waste facility becomes operational.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table V-1 summarizes the potential environmental impacts of the proposed hazardous waste facility, and the measures which would be taken to mitigate them. Impacts would be similar at all three sites unless otherwise noted. For more detailed information, see Section 4 of the Draft EIS and Sections III and IV of this Final EIS.

Table V-1. Mitigation of potential impacts

IMPACTS	MITIGATION
Physical Setting	
Topography over an area of approximately 58 acres would be altered locally by the construction of the facility and access roads. Soils would be disturbed or removed. If erosion is not prevented, this could result in increased wind and water erosion due to the considerable disturbance of the site's natural vegetation. Following the construction phase, some of the disturbed land would likely revert to the pre-construction conditions over a period of years.	If the land transfer is made and the facility is built, ADHS would ensure that the contractor would: • minimize disturbance of soils and vegetation in adjacent areas; • minimize erosion of embankments; • minimize stockpiling of soils or stablize stockpiles to avoid erosion; • rehabilitate borrow areas; • provide adequate drainage.
Water Resources: Ground Water	
Because the estimated depth to ground water is 320 ft (Ranegras Plain) to 500 ft or more (Mobile), the possibility of contaminants from the facility leaching or leaking into ground water is remote. Should ground water become contaminated at	Except in special cases, Federal regulations require that hazardous waste facility units have either: (a) a single impermeable liner with a ground water monitoring system, or (b) a double liner with a leak detection

TABLE V-1, cont'd

IMPACT	MITIGATION
Water Resources: Ground Water, cont'd	
the Mobile site, regional hydrogeologic data indicate that it would take an estimated 270 to 370 years for the contaminated ground water to move from the site to the nearest existing water supply wells. At the Western Harquahala Plain site, it would take some 2,700 to 11,000 years for the ground water to move to the nearest downgradient wells, while at the Ranegras Plain site it would take in the range of 2,250 to 6,750 years.	system between the liners. Specific ground water protection requirements would be established in the facility's hazardous waste permit, and would depend on the characteristics of the site and the design of the facility. Methods which could be used to detect leaks from the facility include: • leak detection and collection system between the double liners in a landfill or impoundment; • liquid mass balance calculations; • unsaturated zone monitoring; • ground water monitoring.
Water Resources: Surface Water	
If a facility constructed at the Mobile site were not adequately designed to withstand flooding from intense storms, run-on from the surrounding watershed could flood the facility and carry contaminants into Waterman Wash. A public health problem could result, although contaminant levels downstream would be reduced by dilution. Diversion of storm waters around the facility as a flood protection measure could affect drainage patterns near the site; the flow of storm water into Northwest Tank could increase.	ADHS would require that the facility be designed to protect against a 100-year storm rather than a 25-year storm, using berms, ditches, dikes, or other hydraulic structures. ADHS would work with the contractor to minimize or avoid adverse impacts on the Northwest Tank or on other areas affected by drainage patterns on and around the site.

TABLE V-1, cont'd

IMPACTS	MITIGATION
Water Resources: Surface Water, cont'd	
Since the Western Harquahala Plain and the Ranegras Plain areas are subject to sheet flow rather than concentrated flooding, the potential for flooding of the facility is lower at these sites than at the Mobile site. Overflow from a nearby portion of the CAP canal due to an intense storm however could flood a facility at the WHP site and carry contaminants into Bouse Wash. A public health problem could result, although contaminant levels downstream would be reduced by dilution. Because the CAP canal is designed to avoid or control overflow problems, such an event is unlikely.	ADHS would require evaluation of the potential for flooding posed by overflow from the CAP Canal. Based on this analysis, appropriate protective measures such as berms, dikes, etc., would be incorporated into the facility design.
Air Quality	
Emission of TSP (e.g., dust, dirt) from construction activity would be expected to add an estimated 10 ug/m^3 to the ambient concentrations, exacerbating occasional TSP problems from natural sources (e.g., dust storms). Smaller amounts of dust could be emitted from operational activities.	ADHS would ensure that the contractor minimize dust problems during construction. Control measures may include: • watering disturbed areas; • ceasing construction during high winds; • using dust suppressants. To control dust during facility operation, ADHS would ensure that the contractor: • revegetate disturbed areas;

TABLE V-1, cont'd

IMPACTS	MITIGATION
Air Quality, cont'd	
	• pave access roads and main areas of vehicle traffic; • water or use dust suppressants on overburden storage piles • water the landfarm area; • cap and revegetate closed landfill areas.
Particulates from an incinerator could add up to about 13 ug/m^3 to the ambient TSP concentrations.	The facility's permit conditions should minimize the emission of particulates from the incinerator.
Volatile organic compound emissions from facility operations could exceed 300 tons per year, making the facility subject to Prevention of Significant Deterioration (PSD) review if the emissions were determined to be "non-fugitive." Additional information would be needed to determine the potential for hazardous or toxic emissions.	ADHS and the facility contractor should carefully evaluate the potential for hazardous emissions from the facility. Proper operation should minimize impacts.
A PCB incinerator could emit dioxin (TCDD) and furan (TCDF), as well as trace amounts of other hazardous compounds. The TCDD and TCDF emissions could pose a risk to public health and the environment if emitted in significant quantities.	As part of the process of issuing a permit for the disposal of PCBs in the incinerator, EPA would conduct a risk assessment for incinerator emissions to determine the potential health risk. During the permit process, this assessment would be subject to review by State and Federal decision-makers as well as the public.

TABLE V-1, cont'd

<table>
<tr><th>IMPACTS</th><th>MITIGATION</th></tr>
<tr><td colspan="2">Public Health and Safety: On-Site Spill Risks</td></tr>
<tr><td>Experience at an existing hazardous waste facility suggests that 0.5 operational spills per year could be expected at the proposed facility. Impacts of a spill would depend on the type of waste, weather conditions, etc. A spill of hazardous waste could emit toxic or hazardous constituents into the air. A "worst case" spill scenario indicates that ambient concentrations of highly volatile substances could pose an immediate hazard within about 1,000 ft of the spill.</td><td>ADHS would work closely with the facility contractor in developing emergency preparedness and and contingency plans required for the hazardous waste permit. Measures that may be included are:
• grading of waste handling areas to a central collection point;
• incorporation of an emergency spill handling system as part of the overall engineering design;
• careful monitoring;
• protection of employee health through training, health monitoring, use of appropriate equipment, and limitations on the handling of certain wastes.</td></tr>
<tr><td colspan="2">Public Health and Safety: Transportation Spill Risks</td></tr>
<tr><td>A transportation risk assessment shows that the potential for accidents is low (0.01 to 0.02 accident per year) along three alternative routes from Tucson to the Mobile site. Accident probabilities for routes from Phoenix to the Mobile site may range from 0.02 to 0.13 accidents per year.
About 0.05 accidents per year could be expected from shipping wastes from Tucson to either the Harquahala Plain site or to the Ranegras Plain site.</td><td>The following actions would minimize the frequency of transit-related accidents and reduce the population at risk:
• Arizona's Law (ARS 36-2800) requires transportation routing regulations to be promulgated. In designating transit routes, ADHS would take into consideration the frequency of accidents and the number of people at risk.
• ADHS would work with the</td></tr>
</table>

TABLE V-1, cont'd

IMPACTS	MITIGATION
Public Health and Safety: Transportation Spill Risks, cont'd	
Accident probabilities from Phoenix to these sites (via I-10) are 0.16 to 0.18 accidents per year. Shipment of wastes from Phoenix and Tucson to the Mobile site poses risks to the population along potential routes and near the proposed facility. The population at risk from Tucson to the site would range from 55,000 to 56,000 (depending on the route) while the Phoenix-site route would place from 104,000 to 133,000 at risk. Schools located in the Maricopa and Mobile areas may be considered as special cases of population at risk. For the alternative sites, the population at risk is estimated to be 60,000 to 225,000 on two alternative routes from Tucson to the sites, and 103,000 from Phoenix to the sites. The potential for spills into the CAP Canal presents a special hazard. However, the probability of such spills is extremely low, since the trucks would be near the Canal for only a short time. The addition of trucks carrying PCB wastes to an incinerator at the facility could increase the population risk factors along the access routes to the Western Harquahala Plain and Ranegras Plain sites by about 4% and to the Mobile site by 32 to 140% (depending on the route).	Arizona Division of Emergency Services (DES) to make any necessary revisions to the State Emergency Response Plan, the document which outlines the roles of Federal, State, and local agencies in the event of transit emergencies. • The facility contractor would work with the county highway departments to ensure that improvements made in access roads consider safety concerns raised in this EIS. • ADHS would encourage waste haulers to limit particularly hazardous loads to those times of the day and weather that are likely to minimize the risk of a transit accident.

TABLE V-1, cont'd

IMPACTS	MITIGATION
Public Health and Safety: Off-site Emergency Response	
For the Mobile site, 14 communities, 3 of which are near the site, could be exposed to hazardous material emergencies; 13 communities could be affected by a transit emergency. Phoenix and Casa Grande are more likely to experience transit emergencies than other cities. For the alternative sites, 20 communities, 7 of which are near the site, could be exposed to hazardous materials emergencies; 20 communities could be affected by a transit emergency. None of these nearby communities and virtually none of the nonmetropolitan communities have adequate emergency personnel, equipment, and communication equipment to respond to such emergencies. Emergency response personnel based in Phoenix could become overburdened if called upon to serve the facility in addition to their present responsibilities.	Mitigation of the effects of hazardous waste incidents depends on response preparedness. ADHS would work with the Division of Emergency Services to ensure preparedness of safety agencies through: • upgrading the state emergency response system to ensure that agencies are adequately equipped; • training personnel to recognize hazardous materials incidents; • training hazardous materials specialists in hazardous chemical management; • ensuring that the Emergency Response Plan is distributed, understood, and tested.
Public Health and Safety: Valley Fever	
Soil disturbance at the Mobile site may pose a risk of Valley Fever to those construction workers who have not previously been exposed. The probability of significant impacts on persons outside the site appears to be low. Occasional high winds could disperse spores to nearby populated areas.	Valley Fever spores cannot be eradicated, but ADHS would work with the contractor to minimize the severity of any spore releases. Precautions may include: • minimizing soil disturbance;

TABLE V-1, cont'd

IMPACTS	MITIGATION
Public Health and Safety: Valley Fever, cont'd	
It is assumed that the Valley Fever spore population at the alternative sites is similar to that at the Mobile site. The population subject to possible exposure is lower than at the Mobile site.	• soil sampling; • confining soil-disturbing activities to periods of low wind velocities; • using dust suppressants; • monitoring health records; • having workers use face mask respirators; • informing workers of risks.
Public Health and Safety: Odors	
Since the proposed sites are located in rural areas with low population density, odors are not expected to be a major problem.	ADHS would: (a) establish a system to respond to any citizen complaints, (b) work with the contractor to alleviate any problems that did arise, and (c) ensure prompt cleanup of any spills.
Public Health and Safety: Noise	
Operational noise levels at the facility would be considerably above background levels, but the general noise level would not be expected to exceed OSHA standards. Facility operational noise would not be expected to affect nearby communities.	The operator would be responsible for complying with all OSHA Noise requirements to protect employees.

TABLE V-1, cont'd

IMPACTS	MITIGATION
Public Health and Safety: Noise, cont'd	
Noise from truck traffic through or near Mobile and Maricopa may be a nuisance. No transportation noise impacts would be expected at the alternative sites, as there are no permanent residences along the main access roads. Facility truck traffic would be an insignificant addition to traffic on I-10.	ADHS would: • work with the contractor to limit traffic-generating activities to daylight hours; • establish a system for responding to citizen complaints; and • monitor and mitigate noise impacts on schools, if requested by school officials.
Ecological Resources	
Construction would result in some loss of vegetation and disturbance of land.	ADHS would require that the contractor: • minimize the disturbance of vegetation; • limit clearing to areas needed for construction or disposal operations; • minimize the size of construction and maintenance roads; • revegetate cleared areas with "appropriate" native seed or mature plants (in consultation with the Arizona Commission on Agriculture and Horticulture and the Arizona Game and Fish Department). The contractor would be required to confirm whether any Federally

TABLE V-1, cont'd

IMPACTS	MITIGATION
Ecological Resources, cont'd	
	protected species would be affected (none are currently known to exist at the sites). Certain State-protected species at the sites would be relocated.
Food, shelter, and nesting habitats for local wildlife may also be disturbed or removed. Some direct animal kills might occur. The operation of evaporation ponds may pose a threat to the avian population attracted to the ponds as a source of water.	Mitigation would consist of: (a) minimizing disturbance of land, (b) revegetating as soon as possible, and (c) informing the contractor and their employees of wildlife protection regulations. Rodent and bird controls, if necessary, would be implemented in consultation with the Arizona Game and Fish Department.
Land Use	
No significant impacts on land use would be expected to result from the removal of 58 to 640 acres from the existing BLM livestock grazing allotment. Only a minor impact on the recreational resources could result. Some of the uses, such as grazing, may reoccur after facility has been fully closed, depending on the conditions of the permit.	Owners or permitees would be reimbursed for range improvements adversely impacted.

TABLE V-1, cont'd

IMPACTS	MITIGATION
Visual Resources	
At the Mobile site, the facility would stand in significant contrast to the existing visual environment. The impact would be low because of the relatively small number of recreational users of the areas, and its distance from populated centers. At the Western Harquahala Plain, the facility would be visible from I-10, but the existing topography and presence of other currently visible structures (CAP canal, pipeline pumping station, transmission line, I-10) would reduce the visual impact of the proposed facility. At the Ranegras Plain site, the visual contrasts of the facility could be significant to users of the Kofa Game Range and a Wilderness Study area. However, existing visual disturbances (transmission line, windmill pump and water tank, and I-10) would lessen the overall impact of the facility on visual experiences. Development of an incinerator at the facility would increase the visibility of the facility due to the presence of a smoke stack. The stack would likely be about 40 feet high.	ADHS would ensure that visual disturbances were minimized as much as possible. Guidelines will include the following: • Protective dikes should appear as natural as possible (e.g., approximating natural grades). • Native vegetation should be used to reduce visual contrast. • Facility structures should appear as natural as possible and be earth tone in color. • Height of facility structures should be limited, if possible. • The incinerator smokestack should be placed in a location which would allow construction of the lowest possible stack, taking into account the topography and various engineering requirements.

TABLE V-1, cont'd

IMPACTS	MITIGATION
Cultural Resources	
No recorded archeological, historical, or significant Native American resources have been identified at the sites; therefore no impact is anticipated. The facility would be expected to eliminate the gathering of subsistence plants by Native Americans on the Mobile site. Given the small area of affected land, this impact would not likely be significant.	The facility contractor, as part of the permit process, must identify any cultural resources at the site or confirm that no such resources exist. If any such resources are identified, appropriate mitigation measures would be taken in consultation with the State Historic Preservation Officer.
Socioeconomics	
Economic/demographic effects would be minimal. There could be increased revenue flow to regional and local jurisdictions, generation of sales tax revenue during the construction period from purchase of construction materials locally, and tax revenue from out-of-state purchases. Because of conflicting impacts on land values, it is not possible to project the net impacts on land values. Odors, traffic noise, and anxiety with respect to other possible public health and safety effects could cause deterioration in the quality of life for a small number of people.	Mitigation measures are identical to those described for impacts on land use and on public health and safety.

SECTION VI

PUBLIC COMMENTS ON THE DRAFT EIS

This Section presents the public comments on the Draft, and EPA's response to the comments, in two parts:

- written comments contained in letters received by EPA Region 9; and
- oral comments made in testimony presented at public hearings held on the Draft EIS.

Written comments start on p. VI-2. Oral comments being on p. VI-92.

WRITTEN COMMENTS

Letters received by EPA have been reproduced here. Substantive written comments are numbered W-1 through W-112. The response to each numbered comment follows the letter in which the comment was made.

The individuals and organizations who submitted comments are listed below in the order in which their comments appear:

- Alex Dely, Arizona Sierra Club
- Arizona Department of Health Services, Bureau of Air Quality Control
- Arizona Department of Health Services, Bureau of Water Quality Control
- Arizona Department of Water Resources
- Jim Hartdegen, State Representative, District 6
- Arizona Game and Fish Department
- Arizona Electric Power Cooperative, Inc.
- U. S. Department of Health and Human Services, Phoenix Area Indian Health Service
- U. S. Department of Agriculture, Soil Conservation Service
- ENSCO, Inc.
- Dr. Chester Leathers, Arizona State University, Department of Botany and Microbiology
- Maria Abdin
- League of Women Voters of Arizona
- Through the Arizona State Clearinghouse:
  - Arizona Department of Water Resources
  - Arizona Agriculture and Horticulture Department
  - Arizona State University, Center for Public Affairs
  - Arizona Game and Fish Department
  - Arizona Department of Public Safety
  - Southeastern Arizona Governments Organization
  - Northern Arizona Council of Governments
  - Arizona State Land Department
  - Arizona Department of Transportation
  - Central Arizona Association of Governments
  - Arizona Department of Health Services
  - University of Arizona, Office of Arid Land Studies
  - Indian Affairs Commission
  - Arizona Natural Heritage Program
- El Paso Natural Gas Company
- U. S. Department of Agriculture, Forest Service
- U. S. Department of the Interior (two letters)

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Donald W. Jackanicz
Secretary

Harry Ruja
Vice-President

Dennis J. Darland
Treasurer

2/5/[illegible]
Tucson Az

U.S. Environmental Protection Agency
Region 9.
Attn.: Chuck Flippo (T-2-1)
215 Fremont Street
San Francisco, CA. 94105.

RE: Comments for the Record regarding the Draft Environmental Impact Statements on the proposed Arisona Hasardous Waste Facility at Rainbow Valley/Mobile.

Dear Chuck:

Thank you for your prompt response to my request for a copy of the DEIS. Following are my comments/criticisms/suggestions which should be more fully addressed in the full EIS. I am forwarding these comments also to various Arisona State legislators. Please interpret the following bare-bone comments in light of my firm belief that Arisona has a great need for such a facility. However,

Alex Daly, Chairman, Science Committee
Physics Department University of Arizona Tucson, Arizona 85721

②

such facility must not come on line at just any cost. I hope the following comments will increase the safety of the site and the facility itself.

⇒ A crucial set of issues not addressed in the EIS, which are relevant, are of a legal nature. a) What will be the legal liability of ADHS if the facility violates its obligations? (As you know, the State will own the land.) VI-1
Even if no legal problems arise, considering ADHS's subsistence budget, will DHS be able to afford to realistically assess serious contamination problems, or will they be tempted to minimise/downplay their importance to prevent a financial drain? VI-2

b) the Salt River Project representative to the ADHS Hazardous Waste Facility Technical Advisory Group (of which I am a member) has on several occasions presented data on land subsidence within 3 to 5 miles

③

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Chuck Elippo, cont'd.

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of the proposed site. This question is not addressed in the EIS. Furthermore, the Groundwater Management Act will not necessarily prevent increased groundwater pumping, as stated in the EIS. The City of Phoenix could still buy-out farms in the Valley area to augment its water-budget, and thereby create unwanted subsidence. This would be wholly unintentional, but the possibility is real, and already present in parts of Arizona. W-3

II) Due to the extremely long time (270 years) before water contamination could be detected (obviously too late to solve the problem), I would suggest that EPA request the addition of a site monitoring system below the second liner of the landfill areas as an extra measure of precaution. (Ch. 4.) W-4

Alex Dely, Chairman, Science Committee
Physics Department University of Arizona Tucson, Arizona 85721

III) The Central Arizona Project canal will pass close by the facility. The Phoenix-area recently had a 100-year flood. The Rainbow Valley area has had similar flash floods. A flood hitting the surface impoundments planned on the site would or could wash tons of heavy metals/acids into the CAP canal, endangering Tucson's drinking water! California is totally banning land disposal of hasardous waste. Why cannot Arizona use the more innovative technology for a site to be operative for 30-some years? VI-5 VI-6

IV) The socio-economics section addresses different levels of user fees to discriminate against out-of-state wastes. Fine. But the fee issue is crucial for in-state wastes. Why are there no data at all, based on other such facilities in the country, of what fee level is most discouraging to illegal dumping? As a private contractor will operate the facility, a serious conflict between the profit motive and the need to reduce illegal dumping may occur! WE NEED DATA! VI-7

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Chuck Elippo, cont'd.

V) Chapter 2 qualitatively states that resource recovery is not viable. Where are the data for such conclusion? Even if this is the case, shouldn't recovery facilities be included in the facility design so they are available when it does become practical. The technologies DO EXIST, and due to sharply increasing energy and mining costs, recovery may soon become feasible. Again, we need DATA! W-8

Related to this, Table C-2 (Arizona's hazardous waste production by type for 1981) is quite incomplete: W-9

a) it was based on an ADHS generator survey with only a 30% response rate

b) all small quantity generator wastes were omitted.

Will this facility be able to treat types of

OVER→

Alex Dely, Chairman, Science Committee
Physics Department University of Arizona Tucson, Arizona 85721

⑥

wastes from these extra sources (in- or out-of state)? (At least 15% of wastes treated will come from out-of-state.) Reference should be made to the planned Arizona Chamber of Commerce Waste Exchange program. W-10

VI) The whole draft is permeated with an overview of the total lack of adequate emergency services on the Mobile and Phoenix areas. Since State funding for training and equipment seems not to be forthcoming at either the State, County or City level, the EIS contains no realistic mitigation suggestions. Yet the report indicates:

ADMITTED RISKS !

a) a projected spill once every 2 years,
b) 0.02 to 0.09 road accidents per year involving these wastes,
c) fires,
d) 40-160 tons/year of volatile organic chemical emissions to the air from surface impoundments and "land-farm" operations.

The EIS should in detail state the manpower W-11

⑦

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Chuck Elippo, cont'd.

equipment, and funding levels necessary to implement adequate emergency response such as developed by other such facilities in the country.

I hope these comments are of use to you, and will be incorporated and seriously addressed in the final EIS.

Sincerely
Alex Dely
Az. Sierra Club, Toxic Substances Coordinator
6150 E. 31st
Tucson, Az. 85711
and
Physics Dept.
Univ. of Arizona
Tucson, Az. 85721.

cc: Senator Lunn
Rep. Bartlett
Sen. De Long
Sen. Mawhinney
Dr. Sarn

Alex Dely, Chairman, Science Committee
Physics Department University of Arizona Tucson, Arizona 85721

W-1 The Request for Proposals which ADHS issued to potential facility contract bidders states that the selected contractor must meet the financial liability requirements of the State and Federal hazardous waste regulations. The State of Arizona would be named as an insured party in all insurance policies that the contractor must obtain. The coverage must be retained for the lifetime of the facility. In addition, the contractor must meet the closure and post-closure financial requirements specified in the Federal regulations (40 CFR Part 264, Subpart H).

In effect, the contractor would provide adequate financial responsibility protection for the operational, closure, and post-closure phases of the facility. The State of Arizona would take over the perpetual care of the site after the closure and post-closure phases. The trust fund provided for by ARS 36-2800 would be used in part to pay for the perpetual care and any necessary liability costs.

Being the land owner, the State would incur ultimate legal liability for the site. The State is self-insured up to $500,000 and maintains liability insurance for $100 million. A citizen or organization could seek redress from the State through appropriate administrative and legal channels. This would normally take place only after the contractor's financial responsibility mechanisms were exhausted.

W-2 In the event of a contamination problem, the facility contractor would be responsible for identifying the severity and extent of the contamination. State involvement in an investigation of contamination would be to assess data provided by the facility contractor and to provide for independent sampling and analysis, if required. The State would also be responsible for evaluating and approving any remedial action plans to correct the problem, and for taking enforcement action if necessary. Resources for the State's monitoring activity would come from the trust fund established by ARS 36-2800. The fund will be used for monitoring, perpetual care, and liability costs.

W-3 See the discussion of subsidence in Section IV, Physical Setting.

W-4 Specific ground water protection requirements for the facility would be established in the permit process. This comment is more appropriately addressed at that stage. See the discussion of liner and monitoring/detection systems in Section IV, Ground Water.

W-5 The CAP canal would not be affected. See Section IV, Surface Water.

W-6 There are no regulations precluding the use of innovative technologies at the Arizona facility. Whether such technology is developed depends on its economic feasibility. This Final EIS includes an analysis of a high-temperature incinerator as an alternative to land disposal of certain types of wastes.

W-7 Data does not exist which would show a relationship between the level of user fees charged and the amount of illegal dumping. While many people would agree that the existence of reasonably-priced disposal options tends to encourage compliance with the hazardous waste control laws, the limited experience with user fees and the difficulty in obtaining statistics on illegal dumping make it hard to assess the real impact of user fees on compliance. One EPA study of state hazardous waste fee systems states the following:

> Officials in one state expressed concern that the use of a fee mechanism might work counter to a program's regulatory enforcement goals by encouraging operators to find ways (both legal and illegal) to get out of the regulatory system to avoid the fees. Fees are accordingly seen as an additional incentive for "midnight dumping." The only response to these concerns is that the states with fees in place did not mention this result to be actually occurring. (30)

The fees to be charged by the facility would be set by ADHS in consultation with the facility contractor. Both the need to generate a profit for the contractor and the need to avoid unreasonably high charges would have to be considered by the Department in setting these fees.

W-8 Additional discussion of resource recovery and waste reduction appears in Section IV, Alternatives.

W-9 DEIS Table C-2 is based on the most complete information available on hazardous waste generated in Arizona, and includes data from some "small quantity generators" who voluntarily submitted reports. The exact amount and types of wastes the facility would be able to handle depend on the specific design and operating plans of the operator. That information would be included in the operator's permit application.

W-10 See the discussion of the Waste Exchange Program in Section IV, Alternatives.

W-11 The State's emergency response capabilities are discussed in Section IV, Public Health and Safety: Spill Risks. The facility operator would be responsible for identifying and providing emergency response equipment and personnel training to ensure quick response to on-site emergencies. Only when the facility design and operating plans are available will it be practical to determine an adequate emergency response system at the facility. This would be done as part of the permitting process.

ARIZONA DEPARTMENT OF HEALTH SERVICES

Division of Environmental Health Services

BRUCE BABBITT, Governor
Donald B. Mathis
Acting Director

REF: HWS 082
February 16, 1983

Mr. Chuck Flippo
U. S. Environmental Protection Agency
Region I (T-2-1)
215 Fremont Street
San Francisco, California 94105

Dear Chuck:

This letter is to transmit comments from the Bureau of Air Quality Control (BAQC) on the Draft Environmental Impact Statement for the proposed State Hazardous Waste Management Facility. Mr. Lloyd Rowe, Acting Chief of the BAQC indicated that:

o Most of the BAQC concerns expressed on a previous draft of the EIS were addressed and that reasonable steps have been identified to minimize particulate emissions.

o A commitment should be made to minimize the tracking of dirt onto paved roads during construction and subsequent operation of the facility. W-12

If you have any questions, please call me at 602-255-1162.

Sincerely,

Tibaldo Canez

Tibaldo Canez, Manager
State Hazardous Waste Site
Bureau of Waste Control

TC:ph

The Department of Health Services is An Equal Opportunity Affirmative Action Employer. All qualified men and women, including the handicapped, are encouraged to participate.

State Health Building 1740 West Adams Street Phoenix, Arizona 85007

W-12 Use of dust suppressants during construction and paving of main vehicle routes within the facility are among mitigation measures identified in the Draft EIS (DEIS pp. 4-14 and 4-16). ADHS's Bureau of Air Quality Control should work with the Bureau of Waste Control to ensure sufficient dust control measures are identified and implemented.

④

ARIZONA DEPARTMENT OF HEALTH SERVICES

Inter-Office Memorandum PDU 10.3

TO Tibaldo Canez, Manager
State Hazardous Waste Site, BWC **DATE** February 2, 1983

THRU J. B. Bale, Manager J Bale
Water Quality Management Section
Bureau of Water Quality Control

FROM V. C. Danos, P. E., Manager
A. J. Gordon, Hydrologist AJG
Program Development Unit

RE Draft EIS for the State Hazardous Waste Management Facility

Overall, this version is far superior to the previous review drafts. Our review has been confined to the discussions pertaining to water resources. The following minor comments are offered:

1. On page 3-8, it is stated that moist sand was detected in an abandoned well. This statement should be clarified to indicate the source of this sand (backfill material, ruptured casing, etc.). W-13

2. On page 3-36, fourth paragraph, it is stated that the average annual groundwater flow velocity is between 1.8 and 7.4 feet each year. From the discussion, it is not apparent how the figure "1.8" was derived. W-14

3. On page 4-5, the EIS notes that in the event of a major undetected leak to groundwater, concentrations of materials in existing wells would be low as a result of subsurface attenuation and dilution. The first reason, implying attenuation in the subsurface, is grossly misstated. This kind of reasoning has historically led to the after-the-fact discovery that chemicals were not removed in the unsaturated zone. With no data to the contrary, this statement is misleading. Secondly, there would be minimal dilution within the saturated zone. Groundwater flow is laminar; dilution would occur only from dispersion W-15

JJB:VCD:AJG:dmk

ADHS ADM Material Control (Rev. 6-74)

W-13 According to the Arizona Department of Water Resources, the abandoned well was still equipped with a submersible pump when the moist sand was detected. Since the pump was still in the well, it is reasonable to assume that the pump had been used within the past few years and that the moist sand in the well is bottom hole material rather than backfill.

W-14 The flow velocity was calculated from regional ground water data using a modified form of the Darcy equation. This method is outlined in EPA's draft Ground Water Monitoring Guidance for Owners and Operators of Interim Status Facilities, 1982. See also comment W-21.

W-15 See Section IV, Ground Water.

⑤

State of Arizona
DEPARTMENT OF WATER RESOURCES
99 E Virginia Avenue, Phoenix, Arizona 85004

BRUCE BABBITT, Governor
WESLEY E. STEINER, Director

February 10, 1983

RECEIVED
REGION I
'83 FEB 15 AM 10

U. S. Environmental Protection Agency
Region 9
ATTN: Chuck Flippo (T-2-1)
215 Fremont Street
San Francisco, California 94105

Dear Mr. Flippo:

In response to an EPA letter dated January 14, this letter is to provide the Arizona Department of Water Resources' (DWR) review comments on the "Draft Environmental Impact Statement for Proposed Arizona Hazardous Waste Management Facility". The comments provided pertain to groundwater related items in the Draft Environmental Impact Statement (DEIS). Many of the following comments have been made before to the Arizona Department of Health Services on drafts previously provided for our review. The page, paragraph and sentence that our comments pertain to are described for your convenience.

Summary

-Page 6-2, Paragraph 4, Second Sentence

"The water table is estimated to lie at a depth of..." The groundwater conditions at the site are a very important environmental concern as is, of course, protection of groundwater throughout Arizona, much too important for basic parameters to be estimated. The site specific groundwater conditions need to be defined. This report, and all others reviewed to date leave any site specific groundwater study to the as yet to be determined site operator with no requirements on necessary data that they will have to provide. This is not sufficient. We suggest that a detailed description of what will be done and by whom be provided. W-16

-Page 5-3, Water Resources section, Ground water subsection, Paragraph 1

"Based on available data concerning regional geology, depth to water, groundwater flow rates, and protective measure..." Regional data are not sufficient to define site specific groundwater conditions and obviously are W-17 not sufficient to design a groundwater monitoring program. This entire section is based on the assumption that site conditions are the same as regional conditions. There is no proof of this. It is also assumed that conditions will remain the same throughout the proposed facility's useful life. This may not be the case, in fact, it probably will not be the case. Groundwater will most likely be the source for the water needed to run the plant. This means a well must be completed near or on the site, which will alter both local and perhaps regional conditions. In addition, there is at least one large proposed industrial project in the Mobile area that will utilize groundwater and will no doubt alter regional conditions. Of course, all future changes cannot be considered; however, without understanding current site conditions, the potential effects of changing regional conditions on the site cannot even be attempted. VI-18

-Same Page, Same Section and Subsection, Paragraph 3

This treatment of groundwater protection is not sufficient. The purpose of an EIS is to evaluate potential impacts and provide a plan to eliminate or reduce the impacts. This cannot be done properly at this time for groundwater because of a lack of site specific groundwater data. However, simply saying it will be taken care of later by the permitting system is insufficient. This EIS should provide specific minimum requirements for data collection, analyses and consideration of these in the monitoring program design as part of the accepted EIS. This is really the only way the federal government, and the public relying on the federal government, can be assured that the environment will be protected. Approving an EIS prior to defining the site environmental conditions without providing for adequate study of the environmental factors appears to be side-stepping the purpose of doing an EIS. VI-19

Affected Environment

-Page 3-8, Water Resources Section, Groundwater Subsection, Paragraph 3

The use of average particle velocity in the formula $\bar{v} = -kdh/dl/\theta$ to calculate the travel time of a pollutant introduced into groundwater is suspect. Average particle velocity as calculated may not represent fluid or contaminant velocity. In fact, many researchers suggest that average particle velocity is inadequate for such use (see Lohman, S. W., Ground-Water Hydraulics, U.S. Geological Survey Professional Paper 708, 1972, p. 10 and 11). W-20

Also, this use of average particle velocity assumes the pollutant travels at the same velocity as the water particle. This is not necessarily so. Pollutant velocity may be higher due to dispersion effects. Thus, travel times calculated using this method are suspect.

-Page 3-36, Paragraph 4

The first "flow rate" (14.6 ft/year) is wrong; the value used in the last sentence (1.8 ft/year) is correct. This is also particle velocity, not flow rate. I am not sure how the first value was calculated, but if the calculation technique used is the same as all of the others in this section, there is an error. W-21

Thank you for the opportunity to comment on this document. If I may be of any further assistance or can clarify any of the above comments, please call.

Sincerely,

Edward A. Nemecek
Chief Hydrologist

nh

W-16 These comments are addressed in Section IV, Ground Water.
W-17 See in particular the discussion of hydrogeologic data
W-18 and the subsequent discussion of the permit.
W-19
W-20

W-21 This observation is correct; the "flow rate" is 1.8 feet per year, as calculated using a modified form of the Darcy equation (see comment W-14). All other figures that appear in this discussion are correct.

"Flow rate" or "flow velocity" is more accurately described as the "average linear velocity of a particle of water."

6

JIM HARTDEGEN
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COMMITTEES
AGRICULTURE CHAIRMAN
COMMERCE
NATURAL RESOURCES & ENERGY
TRANSPORTATION

Arizona House of Representatives
Phoenix, Arizona 85007

February 17, 1983

Mr. Chuck Flippo
Environmental Protection Agency
Region 9
215 Fremont Street San Francisco, CA 94105

Dear Mr. Flippo:

I am writing in regard to the Environmental Impact Statement on the Arizona Hazardous Waste Facility. I would like to aim my remarks to the road system leading into the proposed Rainbow Valley site.

The route would be over Maricopa Highway, which lies between Interstate 10 and Arizona Highway 84, and passes through the little community of Maricopa. From Maricopa westward, travel is via a dirt road called the Maricopa/Gila Bend Road. At the present time, the Maricopa Road is a county highway that is in both Maricopa and Pinal Counties. This road has an unbridged crossing at the Gila River.

This road is in terrible condition and, in my opinion, is not adequate to haul large amounts of hazardous waste. I am sure the dirt road from Maricopa to the dump site would be dangerous under rainy conditions for vehicles hauling waste material. I do not believe the Department of Health Services has addressed the subject of transportation safety and considered the condition of these roads. W-22

I would like these comments submitted into the report for the purpose of calling attention to the fact that the major way into this dump site is, in my opinion, very dangerous. The road system should also be addressed by the Environmental Protection Agency.

If I can be of any further assistance to you, please contact me.

Sincerely,

JIM HARTDEGEN
State Representative
District 6

JH:ba

W-22 See the discussion of access routes to the Mobile site in Section IV, Public Health and Safety: Spill Risks.

2/28
7

BRUCE BABBITT, *Governor*

Commissioners:
CHARLES F. ROBERTS O.D. Bisbee Chairman
FRANK FERGUSON JR. Yuma
FRANCES W. WERNER Tucson
CURTIS A. JENNINGS Scottsdale
JOHN J. GISI Flagstaff

Director
BUD BRISTOW

Deputy Director
ROGER J. GRUENEWALD

ARIZONA GAME & FISH DEPARTMENT

2222 West Greenway Road Phoenix, Arizona 85023 942-3000

February 23, 1983

[illegible]
[illegible] ←
E/S

Sonia F. Crow, Regional Administrator
Environmental Protection Agency, Region 9
215 Fremont Street
San Francisco, California 94105

ATTN: Chuck Flippo (T-2-1)

RE: Draft E.I.S. - Arizona
Hazardous Waste Facility

Dear Ms. Crow:

Our Department has reviewed the draft environmental impact statement for the Arizona Hazardous Waste Facility and we submit the following comments.

Specific Comments by Page:

Page 3-17 "Amphibians and Reptiles".
The desert tortoise and the Gila monster are not listed as endangered by the Arizona Game and Fish Department, as stated in the text. The desert tortoise is listed under Group 3 in "Threatened Native Wildlife in Arizona, approved by Arizona Game and Fish Commission 10 December 1982". By definition, Group 3 includes animals "... whose continued presence in Arizona could be in jeopardy in the foreseeable future." The Gila monster is protected from killing under Commission Order 43, (R12-4-443), but is not otherwise listed. W-23

Page 3-18, 1st paragraph.
The spotted bat is no longer listed in "Threatened Native Wildlife in Arizona" and Arizona Department of Game and Fish should read Arizona Game and Fish Department. W-24

Page 4-8, Surface Waters, Mobile Site.
We agree with the statement that "Under these circumstances, the requirement to protect the facility from a 25 - year storm could be inadequate", especially since, as stated on page 3-10, "Northwest Tank, ... could be affected by surface water draining through or near the site." W-25

AN EQUAL OPPORTUNITY AGENCY

The deserts of Arizona are noted for torrential rains of short duration, which result in substantial runoff on even the smallest of watersheds. This runoff causes much natural erosion and could severly damage the proposed facility and result in significant adverse impact to the downstream environments.

Adequate protection from surface flooding must be provided and the 25-year standard is not adequate. We believe that at least protection from a "100-year" storm is needed to ensure a reasonable level of safety, as stated on page 4-9 under "Mitigative Measures".

Page 4-36, Mitigative Measures, Bird Control.

In reference to the protection of birds from poisoning in evaporation ponds, we believe that bird-proof screening is the minimum control measure that is acceptable. Noise makers are generally effective for only short periods of time, as birds become tolerant of them. W-26

General Comments:

Other than the specific problems noted above, the draft E.I.S. appears generally to be adequate and accurate.

Our Department believes that the Mobile site is the most appropriate site for the hazardous waste facility. W-27

We appreciate the opportunity to review this document and we anticipate close coordination between our Department and the Department of Health Services on this matter in the future.

Sincerely,
Bud Bristow, Director

William E. Werner

William E. Werner
Habitat Specialist
Region IV - Yuma

CC: Don Metz, U.S.F.W.S., Phoenix
Planning and Evaluation Branch, Phoenix
State Clearinghouse, AZ 83-80-0007

WEW/cr

W-23 These two errors have been corrected. See Section II.
W-24

W-25 Comment noted. See Section IV, Surface Water.

W-26 Based on knowledge of similar existing facilities, bird control should not be a problem. If a problem did arise, ADHS would seek guidance and assistance from the Arizona Game and Fish Department to evaluate and implement appropriate bird control measures.

W-27 Comment noted. No response needed.

7

February 18, 1983

U. S. Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, California 94105

ATTN: Mr. Chuck Flippo (T-2-1)

RE: Draft Environmental Impact Statement for Proposed Arizona Hazardous Waste Management Facility, January 1983.

Dear Mr. Flippo:

I have followed with great interest the work performed by the Arizona Department of Health Services in developing an acceptable hazardous waste facility site.

There were objections to the Harquahala and Ronegras sites that are not present with the Mobile site; primarily, location. Transportation of hazardous waste would be much more expensive to the more remote sites. W-28

One aspect of the mobile site that should add to its desirability is the Southern Pacific Railroad that runs almost adjacent to the Mobile property as well as less road distance from the two largest population areas (Phoenix and Tucson). W-29

The primary concern of Arizona is protection of the groundwater. Since a large majority of the people in Arizona depend upon the water source almost entirely, it must be guarded carefully from contamination. Your Draft E.I.S. addresses this concern carefully and I find no fault there. W-30

In establishing a hazardous waste treatment and reclamation facility, the lack of use of railroad facilities under present prohibition does present certain transportation problems. This presents problems in western states where the distances between generators of waste and the facilities for proper disposal are great. W-31

I, therefore, feel that E.P.A. should take immediate steps to alleviate this situation. Most hazardous wastes are considerably less dangerous to the population than railroad tank cars full of 98% sulfuric acid, anhydrous ammonia, chlorine, military ordinance, ethylene oxide, and many other chemicals ---- the list is quite long.

arizona electric power cooperative inc. p o box 670 benson, arizona 85602 phone 602-586-3631

It is my conclusion that the site is well isolated and insulated from private encroachment and, therefore, an excellent site for the purpose intended. W-32

Sincerely,

R. L. Maurice, Jr.

Robert L. Maurice, Jr.
Environmental Engineer

RLM:hb
cc: Tibaldo Canez, Chief
Hazardous Waste Division
Arizona Department of Health Services
Phoenix, AZ 85007

Frank Flanders
Jim Carper
Jim Guinane

W-28 Transportation costs would likely be lower for the Mobile site than for the other two sites. Shipment of hazardous waste in this area generally costs between $2.50 to $3.50 per loaded mile. Using an average cost of $3.00 per mile and mileage estimates from Tables C-1 and C-3 (Appendix C), the costs of shipping wastes to the Western Harquahala Plain and Ranegras Plain sites are estimated to be about 20 percent higher than the costs of shipping waste to the Mobile site. The difference in costs for shipping just hazardous wastes generated within Arizona is considerably greater (about 45%).

	Mobile Site	WHP/RP Sites
Hazardous waste shipments (from Phoenix, Tucson)	$ 493,000	$ 892,000
PCB shipments	877,000	752,000
TOTAL	$1,370,000	$1,644,000

W-29 See the discussion of railroad transport in Section IV, Public Health and Safety: Spill Risks.

W-30 Comment noted. See Section IV, Ground Water.

W-31 EPA does not know of the prohibition referred to in this comment. Under Federal regulations, hazardous waste can be shipped by rail (see Section IV, Public Health and Safety: Spill Risks). The main consideration in deciding whether to ship by rail or by other means is cost.

The danger of hazardous materials compared to that of hazardous waste is discussed in Section IV, Public Health and Safety: Spill Risks.

W-32 Comment noted. No response needed.

9

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EPA REGION IX
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March 1, 1983

Mr. Chuck Flippo
EPA Region IX
215 Fremont Street
San Francisco, California 94105

Dear Mr. Flippo:

The Phoenix Area Indian Health Service has reviewed the "Draft EIS for the Arizona Hazardous Waste Facility."

Our comments will be limited to those items which could possibly effect the health conditions of the Indian people living on or near the Gila River and Ak-Chin Indian Reservations in the vicinity of the Mobile, Arizona site.

The Indian Communities have already expressed their concerns at previous hearings and Mr. Ed Dunn, Director, Tribal Environmental Health Department, Gila River Tribe will be submitting his written comments to your office in the near future.

The Indian Health Service is primarily concerned about the following items:

1. Transportation routes on or near the Reservations will result in increased heavy truck traffic. Heavy traffic on the narrow two-lane Reservation roads will make it considerably more dangerous for the residents who must travel these routes, thereby increasing the possibility of accidents and hazardous waste spills. W-33

2. Increased traffic, will cause Reservation roads to deteriorate and will require a greater maintenance effort. Who will be responsible? W-34

3. Site preparation and increased traffic will create airborne pollution from dust.

   Will the roads leading to the site be paved? Can the Reservation residents be assured that proper dust control methods will be used on the site? Who will be responsible for monitoring airborne pollution on the Reservation lands, in the vicinity of the site? W-35

4. Although the Mobile site is closer to Phoenix and Tucson than the Harquahala Plain site, actual travel time saved may not be that great when comparing traveling on a two-lane road versus an Interstate Highway. W-36

5. In comparing the sites, it appears that the Mobile site has a greater possibility of flooding than the Harquahala Plains site. Can the Indian people be assured that the Mobile site can be adequately protected in event of a 100 year flood? W-37

6. Tests indicate that leakage would take 200-300 years to reach the groundwater table. This may be true at the sites tested, but if leakage or flooding should reach abandoned wells, holes or other soil conditions in the area, the groundwater could be contaminated. W-38

7. Where is the site going to get its water? If a well is drilled on the site, can it be adequately protected to prevent contamination of the groundwater? W-39

The draft EIS has addressed most of our concerns as related to the environmental impact on the Gila River and Ak-Chin Reservations.

We realize that specific site development information will not be available until a Permit Application and design proposal is submitted to EPA and the state.

IHS would appreciate receiving a copy of the final EIS, Permit Application site, design proposal for review and final comment.

Sincerely,

George Oslund, P.E.
NEPA Officer
Phoenix Area IHS

W-33 See the discussion of two-lane roads in Section IV, Public Health and Safety: Spill Risks, under "Risks of Transporting Hazardous Waste."

W-34 Maricopa County and Pinal County have jurisdiction and responsibility for monitoring and maintaining those sections of access roads from I-10 to the Mobile area. Once the Maricopa to Mobile site road is improved, the Counties would likely take over the maintenance of those sections of the road in their jurisdiction.

W-35 Paving of the roads and other dust control issues are addressed in Section IV, Air Quality.

W-36 It is not likely that differences in travel times to the sites would be significant. Even if they were, however, travel time is more related to costs of transport than to environmental impacts. In its siting study, ADHS considered the travel time issue. The criterion the Department used in its evaluation was whether a truck could travel from Phoenix or Tucson to the site, unload, and travel back within a day, so as to avoid expensive overnight travel) (1). Environmental issues related to the use of two-lane roads are addressed in Section IV, Public Health and Safety: Spill Risks.

W-37 This comment is addressed in Section IV, Surface Water.

W-38 The adequacy of flood protection measures is addressed in Section IV, Ground water.

W-39 The facility would be expected to meet most of its water needs through pumping of ground water at the site (see Section IV, Irreversible and Irretrievable Commitment of Resources). Protection of wells is addressed in Section IV, Ground Water.

10

United States Department of Agriculture
Soil Conservation Service
Room 3008 Federal Building
230 North First Ave., Phoenix, AZ 85025

March 3, 1983

U.S. Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, California 94105

Attention: Chuck Flippo (T-2-1)

Dear Mr. Flippo:

We have reviewed the Arizona Hazardous Waste Facility EIS and offer the following comments:

1. Pages 3-3 and 3-4 - The correct name for the sixth (last) soil association is "Chirioni - Gachado - Rock outcrop." W-40
2. Page 3-4 - In the first soil association the Avondale soil should be corrected to read Avondale clay loam. W-41
3. Page 3-32, third paragraph - Correct the second sentence to read "These soils have moderately rapid infiltration rates, possess moderate available water capacity..." W-42
4. Page 4-2, mitigation measures - Additional investigations should establish (a) the suitability of the soils for ease of establishing vegetative ground cover and (b) suitability of the soils for retaining heavy metals and hazardous wastes. W-43
5. The wind direction over evaporation ponds could be a problem, especially when blowing toward Phoenix. W-44
6. You should conduct engineering borings on the Harquahala Plain and Ranegras Plain sites. I recommend that this be done. W-45

Thanks for the opportunity to review this EIS.

Sincerely,

Verne M. Bathurst
State Conservationist

The Soil Conservation Service is an agency of the Department of Agriculture

W-40 W-41 W-42	These three corrections have been noted (see Section II).
W-43	Additional studies which would need to be completed prior to and during operation of the hazardous waste facility have been identified by ADHS (see Appendix F). Site-specific soil investigations relating to soil attenuation (or retention) abilities for specific wastes as well as soil engineering characteristics would be conducted prior to facility construction.
W-44	Effects of high winds on the facility are addressed in Section IV, Air Quality.
W-45	Engineering borings would be done as part of the design process if one of these sites were transferred instead of the Mobile site.

11 [illegible] 3/14/83 [illegible]

Corporate Offices (501) 375-8444

ensco incorporated
member, ensco group
1015 Louisiana St.
Little Rock, AR 72202

March 11, 1983

Mr. Chuck Flippo
EPA Region 9
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Flippo:

Thank you for the opportunity to comment on the DRAFT ENVIRONMENTAL IMPACT Statement for PROPOSED ARIZONA HAZARDOUS WASTE MANAGEMENT FACILITY (the "Draft").

ENSCO, Inc. has submitted a proposal to the Arizona Department of Health Services in response to that Department's REQUEST FOR PROPOSAL FOR A STATEWIDE HAZARDOUS WASTE MANAGEMENT FACILITY. ENSCO's proposal contemplates the installation of an incinerator, a solvent recovery unit, a residue treatment facility, and a landfill.

The operation of the various units would be conducted in a manner that would maximize the recovery of waste which can be recovered, the destruction of waste which cannot be recovered, and the treatment of waste which can neither be adequately recovered nor destroyed. In that manner, the amount of materials to be landfilled, as well as their hazardous properties, can be substantially reduced.

Although the Draft treats the subject of a hazardous waste management facility in a rather comprehensive manner, additional information would improve the Draft's utility. Accordingly, the following is respectfully submitted for your consideration:

1. INCINERATION:

The Draft fails to address the incineration of hazardous waste. Incineration constitutes an increasingly important facet of waste management. Although certain waste materials are not amenable to incineration, an incineration unit would materially reduce the environmental impacts associated with waste management in Arizona. Incineration technology has advanced to the point where a very significant portion of the water and energy required to operate thermal destruction units can be derived from waste materials being incinerated. W-46

The destruction efficiency has also been significantly increased in the past several years. For example, ENSCO's thermal oxidation unit (TOU) at El Dorado was tested in 1981 while incinerating approximately 3700 pounds per hour of PCB's. The concentration of PCB's in the stack gases during that test period was found to be approximately equal to ambient concentration in the area prior to ENSCO's initiation of its PCB operation. In fact, a detailed analysis of the test data indicates that the PCB's which were found in the stack actually came from ambient air which leaked into the stack. (See enclosed copy of a letter from Dr. George Combs to Mr. R. Stan Jorgenson, Chief, Solid Waste Branch, EPA Region VI.)

ENSCO has proposed a two-phase approach to the State of Arizona. Initially, ENSCO would install a mobil unit which has been tested by Battelle and has been found to exceed federal requirements. The second installation would be a larger and permanently mounted facility which would incorporate all of the advances which had been developed at El Dorado. The timing of the installation of the second unit would be dependent upon market conditions.

The energy and water required to support these units would be considerably different and would depend upon the mix of waste materials available for incineration and the extent of resource conservation technology incorporated into the units. To give an outside range of the energy and water required to operate the proposed units ENSCO's incineration complex at El Dorado is served by a 750 KW transformer and uses approximately 100 gallons per minute of water. It should be noted that the complex does not generate electricity from its excess heat. Additionally, the complex does not incorporate conservation technologies which could be indicated in Arizona. You may also wish to note that the El Dorado facility has more than ten times the heat release capacity of the mobile unit. W-47

With regard to environmental impacts, you may wish to review the methods and findings of EPA Region VI relative to that Region's PCB approval of Rollins located at Deer Park, Texas and ENSCO located at El Dorado. Of particular interest would be the risk analysis techniques associated with dioxins. You will note the extremely conservative assumptions employed in that analysis. ENSCO, of course, will provide whatever additional information you may require. W-48

2. EVALUATION OF ALTERNATIVE TECHNIQUES

The Draft does not evaluate the relative advantages and disadvantages of incineration vs. recovery vs. landfill. This is an important point because incineration and recovery offer significant environmental advantages over evaporation ponds and landfills. Of course, each technique also presents a different set of utility needs which may affect siting. W-49

3. UTILITIES AND SATELLITE GROWTH

The Draft does not adequately address the utilities needed to support a high-tech waste management facility. As mentioned previously, specific utility needs must be determined on a facility-specific basis. However, inadequate treatment of those needs in the Draft may effectively "lock-out" high-tech management facilities. While utilities may impose a siting constraint to high-tech management facilities, the reduced W-50 environmental impacts associated with such facilities introduce significant siting flexibilities. For the long term, the constraints and flexibilities should be balanced against each other and against the prospect of significant industrial development in the area of a high-tech management facility. Such associated development is very likely given the fact that the public is becoming increasingly insistent upon prompt and proper treatment of generated waste.

4. MARKETS TO SUPPORT ADVANCED TECHNOLOGIES

The Draft makes a basic assumption that Arizona cannot afford a high-tech waste management facility. It ignores the substantial benefits of a regional market and the fact that all indications point to Arizona as being one of the highest growth states over the next decade or so. ENSCO's marketing strategy is basically to utilize the regional market to support the high-tech management facility needed to accommodate Arizona's current and future needs. W-51

5. TRANSPORTATION CONSIDERATIONS

Although the Draft addresses the probability of transportation accidents associated with hazardous waste traffic to a proposed to site, it fails to put the probabilities into perspective of total transportation. For example, the Draft fails to compare the amount of traffic to the facility with the amount of hazardous materials and hazardous waste now being transported in Arizona. Here it should be noted that hazardous materials (not waste) are routinely transported in large volumes on rail and on the highways. For the most part, these materials are more hazardous than waste materials because they are much more concentrated. Most hazardous waste, in contrast, is so dilute with inert materials that it has no direct economic use. W-52

The increase in hazardous waste traffic associated with a management facility should be compared with the (a) increase in hazardous materials (not waste) transportation which can reasonably be projected and (b) increase in hazardous waste traffic which would occur if there were no management facility in Arizona. With regard to the latter comparison, it should be noted that hazardous waste passes completely through Arizona from one state to another. A management facility in Arizona would reduce the total traffic miles. Furthermore, it would reduce the amount of traffic which would otherwise occur in Arizona from the transportation of wastes which is generated in Arizona but which is transported to other states. W-53

6. IMPACTS OF TRANSPORTATION-RELATED ACCIDENTS

The Draft seriously over-estimates the impacts associated with transportation-related accidents involving hazardous waste while completely ignoring the impacts associated with hazardous materials. It should be again noted that hazardous waste is generally less dangerous than commercial hazardous materials because it is less concentrated. Furthermore, the safety and container integrity requirements associated with the transportation of hazardous waste are similar to, if not identical with, the requirements associated with the transportation of commercial hazardous materials. W-54

7. SITE MANAGEMENT PROBLEMS

From information contained in the Draft, one would assume that management of a facility at the Mobile site would be more difficult than the other alternative sites. Specifically, the other sites appear to be on the periphery of watersheds where sheet flow is the predominate form of surface water. On the other hand, the Mobile site appears to receive flow from a rather large watershed and the site has pronounced channels which must be addressed in the design of the facility. If the foregoing assessment is correct, the Draft should give more consideration to the relative site management advantages and disadvantages in order to avoid misunderstandings by the public. W-55

I hope that the foregoing has provided some assistance to your very important efforts in developing an EIS which will serve the needs of Arizona. If ENSCO can be of further assistance, please feel free to call on us.

Sincerely,

Melvyn Bell

Melvyn Bell
President

MB/at

Enclosure

W-46 Incineration is addressed in Section III.

W-47 Energy and water needs of the facility are addressed in Section IV, Irreversible and Irretrievable Commitment of Resources.

W-48 See Section IV, Air Quality.

W-49 The potential environmental impacts of incineration are summarized in Section III. Recovery operations which appear to be feasible for the Arizona facility have been considered in both the representative "low technology" and "high technology" designs. Utility needs are addressed in Section IV, Irreversible and Irretrievable Commitment of Resources.

W-50 See previous comment.

W-51 This comment has been addressed in the analysis of incineration included in this document.

W-52 See the discussion of hazardous materials transportation in Section IV, Public Health and Safety: Spill Risks, under "Risks from Transporting Hazardous Waste."

W-53 Travel patterns of hazardous waste and PCB shipments are analyzed in Section IV, Public Health and Safety: Spill Risks, and in Appendix C. Increases in hazardous materials traffic are difficult to project, due to the lack of available data. An analysis of current hazardous materials transportation appears in Section IV, Public Health and Safety: Spill Risks, under "Risks from Transporting Hazardous Waste."

As the analyses in Section IV and Appendix C show, development of a hazardous waste facility in Arizona would reduce total travel miles of hazardous waste shipments. Development of a PCB incinerator would also reduce total travel miles of PCB shipments. If no facility were developed in Arizona, the number of PCB shipments through Arizona en route to incinerators in Arkansas and Texas could increase. This is because many generators of PCB waste in the West appear to be storing their wastes at present to see whether less expensive disposal options develop. Without a facility in Arizona, these generators may eventually opt to ship their waste to the existing incinerators rather than continue to store the waste.

On the other hand, failure to develop a facility in Arizona could encourage development of a PCB facility in California or some other western state. This could significantly reduce the number of PCB shipments travelling through Arizona.

W-54 See the discussion of hazardous materials transportation in Section IV, Public Health and Safety: Spill risks.

W-55 See Section IV, Surface Water.

12

RECEIVED
REGION IX

ARIZONA STATE
UNIVERSITY TEMPE ARIZONA 85287
DEPARTMENT OF BOTANY AND MICROBIOLOGY (602) 965-3414

March 7, 1983

U.S. Environmental Protection Agency, Region 9
Attn: Chuck Flippo
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Flippo:

As you will recall, I have been one of the contributors to the Draft Environmental Inpact Statement regarding the Arizona Hazardous Waste Facility and the site selection process with which it is concerned.

As you may also recall, I spoke regarding my concerns with Valley Fever (Coccidiodomycosis) at the public hearing held at the Mobile Elementary School in Arizona on February 17, 1983. As pointed out at that meeting, I am not opposed to the selection of the Mobile site for the facility but I am greatly concerned for the health and safety of the construction workers to be involved in the project, as well as for the school children nearby and for residents living within a radius of approximately 50 miles of the proposed site. Such concern stems from the fact, as I pointed out in previous correspondence with you, that I have found the proposed site at Mobile to be a "hot spot" for the fungus producing Valley Fever. With this knowledge at our disposal we would be remiss in not emphasizing the importance of this information to the health of all concerned with the soil disturbing activities resulting from the project.

It is for this reason that I must express to you my feeling that certain comments appearing in the DEIS dated January 1983 are misleading and give an erroneous impression of the risks of getting Valley Fever and of its significance to those within the range of its infectious spores once these become airborne. I shall direct my comments on each point in the DEIS as follows: In line 12 from the bottom of pg. S-6, we read "the probability of significant impacts on persons outside the site would be low". This statement is not in keeping with the published observations of the Kern County, California experience of Dec. 20, 1977 in which several hundred cases of Valley Fever occurred following a dust storm 310 miles to the south. This epidemic cost residents far to the north over $1 Million in medical costs and the loss of several lives. Thus we see that once soils are disturbed, nature may disperse the pathogen over great distances and it may not require 99 mph winds to accomplish it. Science simply does not know how far the spores may be airborne under various conditions and still remain highly infectious. To include the present statement that "probability of infection would be low", is completely presumptuous. W-56

Page S-6, line 9 from bottom of page 19 - Current wording reads, "Evidence suggests, however, that the spread of Valley Fever, even under these conditions, would be low, since immunity is presumed to have been built up over time in most area residents". First of all, there is no evidence whatever to "suggest" "that the spread of the disease would be low". We simply do not know what the spead would be from an area of high fungal concentration but certainly there is a much higher than normal risk as compared to areas where the fungus is rarer or non-existent. Further, the statement "since immunity is presumed to have been built up - - -" is not compatible with such non-existent evidence, nor is it compatible with the facts that all of the area residents have undoubtedly not had the disease and that many construction workers themselves may be from non-endemic areas where they have never been exposed to it. The statement simply attempts to brush off the probability of infection by refering to non-existent "evidence" and by "presumptions" which are dangerous when applied to those who have not been exposed to the pathogen. Also, the reference to "most area residents" is mis-leading in that it implies the rest of the population can be "sacrificed" to the potentially deadly disease.

Similar mis-leading and unsubstantiated remarks can be found on pages 2-11 bottom paragraphs and 2-12 top paragraphs.

In short, the impression is given that the project is worth the sacrifice and that Valley Fever is really not such a risk after all. To permit such an erroneous impression to exist in the DEIS is to render a disservice to our citizens and to lead them into a false sense of security. I can only imagine what negligence this impression could lead to by contractors of the project and others engaged in its construction.

The steps which I believe should be taken to measure the impact of construction at the Mobile site are those I described in my letter to you dated February 25, 1982. Only in these ways will adequate data be obtained to enable us to learn how important such activities are in causing increased incidence of Valley Fever in local area residents and in evaluating the effectiveness of the prevention measures recommended.

Sincerely,

Chester R. Leathers, Ph.D.

Chester R. Leathers, Ph.D.
Associate Professor of Microbiology

CRL:rl

W-56 These comments are addressed in the discussion of Valley Fever in Section IV. Dr. Leathers' letter of February 25, 1982, which was submitted during the EIS scoping process, has been reprinted here for the benefit of reviewers.

ARIZONA STATE
UNIVERSITY TEMPE, ARIZONA 85287

DEPARTMENT OF BOTANY AND MICROBIOLOGY (602) 965-3414

25 February 1982

Mr. Chuck Flippo
Environmental Protection Agency
Toxics and Waste Management Division
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Flippo:

As indicated during the evening of February 18, 1982 at the Environmental Impact Scoping Meeting held at the Mobile Elementary School near Maricopa, Arizona I am contacting you in regard to concerns regarding construction of an Arizona Hazardous Waste Management Facility near that community. Due to the more technical aspects of my comments regarding the hazards to human health relating to the construction phase and early operation of the proposed project, I was asked to send you a letter outlining my comments.

As background information, I should point out that I have been conducting research on Arizona soils for the past few years with special attention being given to the distribution of medically important or human disease fungi present in the soil in various areas of the state. I have also conducted similar tests for the Bureau of Land Management in southern California during 1977-79 under grants provided by them to survey the soils of off road vehicle-use sites. It has been during these studies that I have found the fungus causing Valley Fever (also called Desert Fever and San Joaquin Fever) to be especially prevalent in the area of the proposed hazardous waste site approximately twenty miles west of Maricopa, Arizona. I have isolated the fungus, Coccidioides immitis, many times from this area and I consider it to be a "hot spot" for the pathogen, primarily because I have been able to isolate it more often from the soils of this area than from most others I have tested. Because of this experience, I am concerned that adequate precautions be taken to protect the life and health of those who may be working on the proposed project (equipment operators, surveyors, etc. etc.) as well as the residents of nearby communities such as Rainbow Valley, the students attending Mobile Elementary School, the village of Maricopa, Estrella Dells sub-division, Grand View Ranches and possibly the residents of southwest Phoenix, among others. In other words, I am not opposed to the selection of the Mobile site for the hazardous waste disposal project, but I am justifiably concerned about the impact that soil disturbances in the area may have on the subsequent health of residents and workers.

Although Norm Weiss of the Arizona Department of Health Service;was quoted in the Arizona Republic newspaper recently as saying, "The fungus has been here for many years" and "I disagree (with Dr. Leathers) that present methods of dust control are inadequate", such statements do not properly reflect the actual situation nor do they connote the concern for the disease felt by the residents of Arizona. Certainly, the fungus has been known in Arizona soils for many years but it has also been known that it is dispersed in dust from previously un-disturbed native soils and that it is via the air from such disturbances that the potentially deadly inoculum is borne to man. Our studies to date, indicate that the fungus becomes airborne chiefly during and after men-caused disturbances of the native soil in the endemic areas. It is also well known that severe disease development by most micro-organisms often results from greater than average exposure to a given pathogen, thus we can expect not only an increase in disease incidence near the site but also the likelihood of more debilitating and life-threatening cases, unless adequate dust-control practices are rigidly adhered to. No studies have been conducted to date, before such projects occurred, to determine the impact of such activities on the disease incidence and this is especially appropriate in the Mobile area in light of our learning that the area is a "hot spot" for the pathogen.

What I feel is needed in this instance is the following:

1. Specific information on Valley Fever should be provided to workers and nearby residents regarding the symptoms of the disease and to seek medical attention if symptoms develop during the construction phase of the project. This can be done as simply information sessions without creating undue concern among residents. It should be noted however, that courts have previously ruled the public is entitled to be informed of any risks to their health beforehand. The same rights belong to unsuspecting workers on the project. (See newspaper clippings enclosed.)

2. Specific instructions should be given to the construction workers, prior to land-clearing activities, in regard to proper methods of dust control to insure maximum effectiveness in keeping the pathogen from becoming airborne.

3. Soil tests should be conducted on earth piles, surface soil etc. at the site to determine how long after the initial land-clearing operation, the fungus remains viable and capable of becoming airborne in significant quantity.

4. A study should be initiated before construction begins, to determine the impact of the project upon subsequent disease development in the area. Such a study should involve at least the following:

a. Skin tests of local residents, project workers, and school children to determine those who are "positive" beforehand.

b. A survey of area residents, workers, and school children during and after the construction phase to determine any changes in disease incidence.

c. Skin tests should be given after each phase of construction to all previously negative persons to determine how many have converted to positive during each phase of construction.

d. Some serological tests may also be desirable to correlate with skin tests.

e. Special soil treatments should be evaluated for their effectiveness in dis-infecting soils and soil piles, to better control disease risk.

My concerns are not limited to soil disturbances only at the construction site, but also include new road construction or enlargement of existing roads, to be used for access as well as land clearing for railroad spurs, etc.

You should also be informed that although farmers are frequently blamed for generating the valley-fever laden dust, our tests do not indicate this to be the case, probably due to the fact that most farm fields have been under cultivation long enough to eradicate the fungus from them. Instead, it is the disturbance of native desert soils, previously undisturbed, or those which have lain fallow for several years, which are the source of the infectious agent. Thus, it is even more urgent to give attention to the proposed site and its accompanying access and service roads.

To further provide your office with helpful information on the significance of this disease, I am listing several points below, most of which you will find borne out in the reprints, clippings and copies of other published information I am enclosing:

1. The known death rate (i.e. diagnosed and reported cases) due to Valley Fever in Arizona annually is 25 persons. The true figures are probably between 75-100/year due to:

   a. Difficulty in diagnosis and incorrect diagnoses.

   b. Required reporting of deaths by Arizona physicians was not initiated until Jan. 1981, thus inadequate figures have been used to measure the death rate.

2. Several hundred people are debilitated annually in Arizona due to Valley Fever and considerable loss of job time and income results.

3. An estimated loss of $325 million annually occurs in the southwestern U.S. due to Valley Fever. (See pp. 203-204 of Leathers' "Plant components of desert dust in Arizona --", Geol. Soc. of Amer. - 1981, enclosed).

4. Courts have established liability of sponsoring organizations for providing adequate prior information dispersal, adequate dust control practices etc. and have awarded medical costs and damages to patients who have acquired valley fever on projects where proper precautions have not been taken beforehand. (See enclosed clippings involving Int'l Harvester Co. and its Phoenix, AZ test facility.)

Additional information relating to this disease can be found in other materials enclosed.

In conclusion, I believe the Environmental Impact Statement relating to the proposed Arizona Hazardous Waste Management Facility for the Mobile-Maricop, AZ area should reflect the above concerns for the health and safety of nearby residents and workers and that specific recommendations are being made to adequately determine the impact of the project for all concerned.

Should there be additional information you might need or should I be able to provide assistance in regard to any of the above matters, please do not hesitate to contact me.

Sincerely,

Chester R. Leathers, Ph.D.
Assoc. Professor of Microbiology

CRL:rd

13

RECEIVED
REGION IX

María Abdín
P.O.Box 2641
Tucson, Arizona 85702

11 March 1983

U.S. Environmental Protection Agency,
Region IX
215 Fremont Street
San Francisco, California 94105

Attention: Chuck Flippo (T-2-1)

Re: Draft Environmental Impact Statement
Arizona Hazardous Waste Facility

Gentlemen:

I have just read the above-referenced Draft Environmental Impact Statement. The preparers appear to have done a conscientious job with the information available.

For some time I have been concerned about inadequate and/or improper hazardous waste disposal in Arizona--such as dumping wastes in sewers or in the desert. My comments and questions on the proposed sites follow.

A. HYDROLOGY

1. Community dependence on groundwater. It is noted that communities near all three sites are dependent on groundwater (Mobile--DEIS p. 3-8; Western Harquahala 3-36; Ranegas Plain 3-57). W-57

2. More data on groundwater needed. It is fairly clear from the DEIS that estimates of impact on groundwater from such a hazardous waste facility have been based on insufficient data. Specifically, more information on aquifer characteristics is needed: W-58

Mobile: "The presence or absence of faults in the alluvium and in the bedrock adjacent to and beneath the site cannot be determined on the basis of the available data" (3-5).

Depth to groundwater is estimated...no groundwater measurements have been made at the site (3-5).

Western Harquahala: "Available data are inadequate to assess fully the faults in the area or at the Western Harquahala Plain site" (3-34).

It is not known what aquifer the groundwater under the site belongs to (3-36).

Ranegas Plain: "Available information is inadequate to permit an assessment of faults...in either the general area or at the Ranegas Plain site" (3-57).

3. Possibility of aquifer contamination. The DEIS estimates it would take from 270 to 11,000 years for surface contamination to reach the nearest existing wells, depending on the site. It would seem to me, however, that one cannot adequately estimate how long it would take for surface contamination to reach groundwater and existing wells without knowing the characteristics of the aquifer and the ground above it: W-59

> ...Irrespective of the source of contamination, what is important is the solubility and transport of contaminants in relation to the properties of soil and aquifer rock (Hall 96).
>
> For the prediction of the solubility of inorganic substances in the ground, it is necessary to assume the formation of well-defined insoluble compounds. Whereas the adsorption of ions onto minerals is bound to occur, this cannot be confidently taken into account because of the many uncertainties involved. Furthermore, for the removal of unnatural contaminants from groundwater, it is probably improper to depend upon adsorption by rock particles since this is essentially only a temporary effect (Hall 103).
>
> Polluted water may enter an aquifer by seepage through the substance of an aquifer or by flowing rapidly through comparatively wide channels in granular media and through fissures.... If abstracted groundwater is affected by pollution through rapid-transit channels, the effects on the aquifer are equally rapidly overcome by the flushing out of the channels by clean water.
>
> However, there is cause for concern in systems which are not fissured and which are apparently unaffected by obvious sources of pollution. The concern is that an aquifer rock removes pollution from the water and that the rock itself becomes contaminated. The question which should be answered is whether a pollution front can slowly move through an aquifer, eventually to fill it and with little chance of the pollution being removable (Hall 108, 109).

Flow rate of contaminants is an important factor. The flow rate in the aquifers have been estimated, but increased pumping could increase that rate. Also, can we assume that under all conditions flow rate of an aquifer is the same as the rate of dispersion of a contaminant through the aquifer? (One is reminded of how fast a drop of ink can disperse in a cup of standing water.) In Tucson, surface chemicals contaminated wells in less than 50 years.

4. Water for the facility. A question which seems not to have been addressed in the DEIS--the facility itself will presumably need a source of water. How much water will it be using, and where will it be drawing the water from? If a well is dug on-site (there is presently a well on the Ranegas Plain site (3-59), or near the site, how will it affect rate and direction of aquifer flow? Could such a well, in case of a spill (with or without rain or sheet flooding) become a channel for contaminants to reach groundwater? W-60

5. Effect on stock ponds (Mobile). What is the possibility of sheet flooding at the Mobile site (F5-2) being able to wash spilled chemicals into the stock ponds nearby? (3-16) W-61

Hall, E.S., "Some Chemical Principles of Groundwater Pollution" - in Groundwater Pollution in Europe - Proceedings of a Conference Organized by the Water Research Association in Reading, England, September 1972, editor John A. Cole (Port Washington, New York - Water Information Center, Inc.)

6. Groundwater monitoring. Monitoring of groundwater for contamination would necessarily be monitoring for unknowns. What is the expense of such monitoring, and does the State have the capability of doing such monitoring on a routine basis? W-62

7. Other possible site locations. Are there any places in Arizona where the local residents are not primarily dependent on groundwater? If so, might any of them serve as a hazardous waste site instead? W-63

B. AIR QUALITY

It is clear that under some conditions, facility emissions might create serious problems:

> Given the distance from the facility to the nearest residence...odors are not expected to be a problem off-site. This would depend, however, on the frequency, amount, and type of spills, treatment techniques, wind conditions, and odor-reducing techniques used at the proposed facility (4-32).
>
> ...other landfills with organic wastes show high emission rates of organics, many of which are potentially hazardous compounds.... While the experience at other facilities may not be applicable to the proposed Arizona facility, it does suggest a potential for organic and/or toxic emissions from the landfill (4-14).

Data on air movement patterns at the proposed sites seem to be scanty (3-7, 3-24). Do inversions occur in these areas, and if so, how would they affect concentrations of toxic and/or malodorous emissions in nearby areas? Would emissions in an inversion adversely affect humans, animals, and landscape or other plants in the area? W-64

C. PLANT DESIGN AND OPERATION

1. Treatment ponds. Would the treatment ponds be covered during rain and flooding? W-65

2. Verification of chemical identity. Both the adequate, safe treatment of chemicals, and the handling of spills and accidents, depend upon knowing what the chemicals are.

> Most organizations that provide technical information on chemical hazards handling measures require the names of pure chemicals. Information concerning wastes and/or spills is not as readily available. (4-29)

I have been informed that at one hazardous waste landfill the operator simply accepted the shipper's description (such as "solvents," "sulfuric acid," "nitrates") with no attempt at verification. Would there be any means of verification at the proposed facility? It should be noted that most waste chemicals are not pure substances, but are dirtied by other chemicals. W-66

3. Other technologies. Do other suitable technologies exist (such as high-temperature incineration) for disposing of these hazardous wastes? How do they compare with the proposed design in terms of effectiveness, cost, and safety? W-67

D. HAZARDOUS WASTE EMERGENCIES

1. On-site accidents.

> The uncontrolled release [explosion, leaks?] of hazardous constituents from the facility...could pose a potential long-term health hazard to nearby residents (4-51).

> The impacts of an on-site spill or emergency would depend on such factors as the specific hazardous substances involved, the nature of the incident, weather conditions (4-17).

Is there presently in existence a similarly designed plant in operation? Where? How long has it been operating? What has been the experience with this facility in terms of leaks, spills, emissions, and their effect on public health and environment? For any of the proposed Arizona sites, what would a "worst-case" emergency scenario entail? W-68

2. Transportation accidents.

> Based on the experience of a California facility, approximately one on-site spill occurs for every 10 million gallons of waste delivered to the facility. Based on these data, a probability of 0.5 spills per year could be expected from facility operation (4-17).

According to the Arizona Department of Public Safety, hazardous waste delivery trucks contain about 7,000 gallons of wastes each. If a site handled 5 million gallons of waste per year, an average of 2 trucks a day would be expected if it were open 365 days a year, and 3 trucks a day if only open Monday through Friday.

The idea of hazardous waste trucks passing schools makes me very nervous. Although statistically the risk of accident is low, one 7,000-gallon hazardous waste truck crashing beside a school could be a terrible thing. I would like to see at least 1,000 feet between any passing truck and the boundary of a school yard. W-69

3. Emergency response. At present none of the proposed areas appear to have the capability of handling a major hazardous wastes emergency of any kind (3-12, 3-41, 3-62). It seems unfair that local communities should have to provide and pay for emergency services for accidents related to a State hazardous waste site run for the benefit of profit-making businesses. I feel the State should pay for clean-up and be reimbursed by the shipper and/or facility operator, as applicable. I also feel the emergency services should be funded and operated by the State, and that emergency personnel from local communities (police, fire, ambulance, etc.) should receive some training in emergency response at State expense, and a communications network including the local communities should be established. W-70

E. LIABILITY

1. Emergency handling plans in permit. "Specific spill prevention, countermeasures, and contingency plans would be prepared as part of the facility permit." This is very good! (S-5) W-71

2. Performance bond. I feel a performance bond must be submitted by the contractor to ADHS (E-1). W-72

3. What redress does a citizen have under the State's "self-insurance coverage"? (E-1) W-73

A final note: I would hope that Arizona can encourage industries to design products and manufacturing methods so as to use less toxic and hazardous materials; and to encourage industries committed to non-hazardous products and processes to settle in Arizona. W-74

Thank you for the opportunity to comment.

Sincerely,

María Abdín

cc: Larry Hawke, Chairman, House Natural Resources and Energy Committee
John Hays, Chairman, Senate Natural Resource and Agricultural Committee
James E. Sarn, M.D., Director, ADHS
Tibaldo Cañez, Chief, ADHS Bureau of Waste Control
Southwest Environmental Services, Tucson

W-57 Comment noted. No response needed.

W-58
W-59 See Section IV, Ground Water, in particular the section on hydrogeologic data.

W-60 The facility would presumably draw most of its water from the ground water aquifer beneath the site (see Section IV, Irreversible and Irretrievable Commitment of Resources). The potential for ground water contamination via the well and the effect on regional ground water movement are discussed in Section IV, Ground Water.

W-61 This comment is addressed in Section IV, Surface Water.

W-62 The cost of ground water monitoring cannot be determined until the exact monitoring requirements for the facility are established in the permit (see Section V). The highest cost is the initial expense of putting in monitoring wells, which according to one estimate, could cost up to $85,000 per well at the Mobile site. Normally, a minimum of four wells are installed (one upgradient, three downgradient), but this can vary. Continuing costs for maintaining the wells and analyzing samples could run to a few thousand dollars per year (depending on the number of wells and the number of samples). These costs would be covered by the facility operator rather than the State. ADHS would make periodic inspections and monitor reports from the facility. Under State law (ARS 36-2800), costs to the Department of monitoring the operation and environmental impacts of the facility may be covered by the State trust fund, which would be derived from a portion of the disposal fees charged at the facility.

W-63 See the discussion of alternative sites in Section IV, Alternatives.

W-64 Data on air movement patterns at the proposed sites are limited. The need for additional site-specific data is addressed in Section IV, Air Quality. Inversions are also discussed in that Section.

W-65 See the discussion of alternatives to surface impoundments in Section IV, Surface Water.

W-66 Analysis of incoming wastes is now required under the Federal regulations (see the discussion of proper handling of wastes in Section V).

W-67 High-temperature incineration is addressed in Sections III and IV.

W-68 See the discussions of on-site spills and the hazardous waste spill scenario in Section IV, Public Health and Safety: Spill Risks.

W-69 See the discussion of risk to schools in Section IV, Public Health and Safety: Spill Risks, under "Risks from Transporting Hazardous Waste."

W-70 See the discussion of emergency response in Section IV, Public Health and Safety: Spill Risks.

W-71 Comment noted. No response needed.

W-72 The Request for Proposals that ADHS issued for the construction and operation of the proposed facility contains a provision that requires the contractor to submit to ADHS a performance bond. The bond would be used to reimburse ADHS for any operational, legal, or incidental damages incurred in the event of default by the contractor.

W-73 See the response to comment W-1.

W-74 The responsibility of ADHS in the hazardous waste program is to ensure that the waste is properly managed within the State and that adequate public health and environmental protection is provided. The encouragement of industries committed to non-hazardous products and processes to settle in the State is an economic development issue and not under the jurisdiction of ADHS. A copy of this EIS is being forwarded to the Office of Economic Planning and Development for their consideration.

ADHS is working to encourage the recovery and reuse of hazardous wastes through the Chamber of Commerce's planned Waste Exchange Program, described in Section IV, Alternatives, under "Resource Recovery and Waste Reduction." If successful, this program could help eliminate the need to treat or dispose of some types of hazardous wastes.

14

March 1, 1983

To:
Environmental Protection Agency, Region 9
215 Fremont St.
San Francisco, CA. 94105
Attention: Chuck Flippo

From:
League of Women Voters of Arizona

[illegible]

The League of Women Voters' involvement and participation in the scoping process relating to the proposed HW facility was based on a fervent belief that public participation should be an integral part of this siting process. Our committment, as yours, to protect the environment, and accomplish a waste treatment facility in Arizona, prompts us to support your efforts!

Our concern still exists over surface water problems in the event of flooding. The precautions outlined in the EIS are adequate but because there is always present in Arizona, and especially at the Mobile site, the real possibility of flooding W-75
and consequently contamination we suggest further information into alternative treatment methods to the mentioned surface impoundments. Ground water protection measures are applauded if in fact leak detection methods can be implemented in addition to W-76
water monitoring.

Transportation still seems to be an area in which more information is needed. Emergency availability and risk factors W-77
are totally dependent on basic transportation issues.

Reproduced from best available copy.

The accident probability figures are not clear to me
however. Is the % of accidents per truck load of waste, or per W-78
mile travelled and how was that data calculated? Our concern
still remains over the transportation route by grade schools in
the communities of Maricopa and Mobile. That seems like an W-79
unnecessarily dangerous prospect.

We thank you, Chuck, for making the DEIS available to us so that we may comment.

Tina Morgan
Hazardous Waste Chair,
League of Women Voters of Az.

W-75 See the discussion of alternatives to surface impoundments in Section IV, Surface Water.

W-76 Specific ground water protection requirements for the facility would be established in the permit process. This comment is more appropriately addressed at that stage. See the discussion of liner and monitoring/detection systems in Section IV, Ground Water.

W-77 Transportation issues are discussed in Section IV, Public Health and Safety: Spill Risks.

W-78 Calculation of the accident probability figures is explained in Appendix N of the Draft EIS and summarized here in Section IV, Public Health and Safety: Spill Risks.

W-79 See the discussion of risk to schools in Section IV, Public Health and Safety: Spill Risks, under "Risks from Transporting Hazardous Waste."

major

SIGNOFF

15

OMB Approval No. 29–R0218

FEDERAL ASSISTANCE

2. Applicant's application
a. Number
b. Date 19 *Year Month Day*

3. State application identifier
Number z 83-80-0007
Date Assigned 19 83 01 26 (*Year month day*)

Leave Blank MAR 11 1983

Laurie Dunn

Section I - Applicant / Recipient Data

1. Type Of Action (*Mark appropriate box*)
☐ Preapplication
☐ Application
☐ Notification Of Intent (Opt.)
☐ Report Of Federal Action

4. Legal Applicant/Recipient
a. Applicant Name U.S. Environmental Protection Agcy.
b. Organization Unit Region 9
c. Street/P.O. Box 215 Fremont Street
d. City San Francisco
e. County
f. State California
g. Zip Code 94105
h. Contact Person (*Name & telephone no.*) Chuck Flippo (T-2-1) (415)974-8128

5. Federal Employer Identification No.

6. Program (*From Federal Catalog*)
a. Number 66•999
b. Title Environmental Protection Agency

7. Title and description of applicant's project Arizona Hazardous Waste Facility - Draft Environmental Impact Statement

The State of Arizona proposes to purchase a one-square-mile parcel of federal land from the U.S. Bureau of Land Management (BLM) for the purpose of siting a hazardous waste management facility. The proposed facility would be designed to treat, store, and dispose of hazardous wastes that are generated in Arizona but are not disposed of on the generator's property.

8. Type of applicant/recipient
A–State
B–Interstate
C–Substate District
D–County
E–City
F–School District
G–Special Purpose District
H–Community Action Agency
I–Higher Educational Institution
J–Indian Tribe
K–Other
(*Specify*) Federal Agency
Enter appropriate letter K

9. Type of assistance
A–Basic Grant
B–Supplemental Grant
C–Loan
D–Insurance
E–Other
Enter appropriate letter(s) e

10. Area of project impact (*Names of cities, counties, states, etc.*)
(There are 2 other alternate sites) near Mobile, Arizona (Maricopa Co.)

11. Estimated number of persons benefiting

12. Type of application
A–New
B–Renewal
C–Revision
D–Continuation
E–Augmentation
Enter appropriate letter a

13. Proposed Funding

a. Federal	$	.00
b. Applicant		.00
c. State		.00
d. Local		.00
e. Other		.00
f. Total	$	.00

14. Congressional Districts Of:
a. Applicant
b. Project mul.

15. Type of change *For 12c or 12e*
A–Increase Dollars
B–Decrease Dollars
C–Increase Duration
D–Decrease Duration
E–Cancellation
F–Other *Specify*
Enter appropriate letter(s) ☐☐☐

16. Project Start Date *Year month day* 19

17. Project Duration *Months*

18. Estimated date to be submitted to federal agency 19 *Year month date*

19. Existing federal identification number

20. Federal agency to receive request (*Name, city, state, zip code*)

21. Remarks added ☐ Yes ☐ No

Section II - Certification

22. The Applicant Certifies That

a. To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved.

b. If required by OMB Circular A-95 this application was submitted, pursuant to instructions therein, to appropriate clearinghouses and all responses are attached.

	No response	Response attached
(1) Arizona State Clearinghouse	☐	☒
(2) Region I Clearinghouse (MAG)	☐	☒
(3)	☐	☐

23. Certifying representative
a. Typed name and title
b. Signature
c. Date signed *Year month day* 19

Section III - Federal Agency Action

24. Agency name

25. Application received 19 *Year month day*

26. Organizational Unit

27. Administrative office

28. Federal application identification

29. Address

30. Federal grant identification

31. Action taken
☐ a. Awarded
☐ b. Rejected
☐ c. Returned for amendment
☐ d. Deferred
☐ e. Withdrawn

32. Funding

a. Federal	$	.00
b. Applicant		.00
c. State		.00
d. Local		.00
e. Other		.00
f. Total	$	.00

33. Action date 19 *Year month day*

34. Starting date 19 *Year month day*

35. Contact for additional information (*Name and telephone number*)

36. Ending date 19 *Year month day*

37. Remarks added ☐ Yes ☐ No

38. Federal agency A–95 action
a. In taking above action, any comments received from clearinghouses were considered. If agency response is due under provisions of Part 1, OMB Circular A-95, it has been or is being made.
b. Federal Agency A-95 Official (*Name and telephone number*)

424-101

Standard Form 424 Page 1 (10-75)
Prescribed by GSA, Federal Management Circular 74-7

Comment Form To Be Completed by Reviewing Agency

State Application Identifier (SAI)

83-80-0007 State AZ No JAN 26 1983

TO:

Department of Water Resources
Mr. Frank Barrios
99 E. Virginia
Phoenix, AZ 85004

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water ✓
AORCC
Land
Parks

RECEIVED
JAN 27 1983
WATER RESOURCES

6 Regions

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☐ Proposal is supported as written ☒ Comments as indicated below

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary): Will comment by letter on draft EIS

W-80

Reviewers Signature ______________ Date 1/31

Title ______________ Telephone 1586

W-80 The Department of Water Resources submitted comments in a separate letter. See comments W-16 through W-21.

Comment Form To Be Completed by Reviewing Agency

TO:

Director
Agriculture & Horticulture Dept
421 Capitol Annex West
Phoenix, AZ 85007

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

State Applicatio[n Ide]ntifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

Indian Affairs
Game & Fish
Transportation
Ag. & Hort. ✓
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

6 Regions

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☐ Proposal is supported as written ☑ Comments as indicated below

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

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6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary): Allow Salvage of Protected Native Plants that would be destroyed during the Construction of the disposal area.

W-81

Reviewers Signature ____________ Date 2-1-83

Title Director Div. of Compliance Telephone 255-4373

W-81 ADHS would seek guidance from and work with the Arizona Department of Agriculture and Horticulture to ensure that protected native plants within construction areas are properly salvaged or relocated.

Comment Form To Be Completed by Reviewing Agency

State Applicant Identifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

TO:

Dr. James Becker
Center for Public Affairs
Arizona State University
Tempe, AZ 85281

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

DEIS RAINBOW VALLEY

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies *
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

Center for Public Affai
ASU Library-Rebecca Burke

6 Regions

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☐ Proposal is supported as written X☒ Comments as indicated below

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

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6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary): The proposition that "the impact would be insignificant" (p.S-8, Ecological Resources) is not factual. The sum of such impacts is the present ecological degradation. W-82

The statement that a private facility "would meet strong public opposition" is not supported in the document; has not been tested. W-83

Reviewers Signature C. J. Becker Date 2-10-83

Title Prof. Center for Public Affairs Telephone 965-1073

W-82 We disagree with the comment. While it may be true that the sum of numerous small changes may create a significant impact on a community or on a specific environment, construction of the proposed facility would be a single action affecting a small parcel of land (one square mile). The desert populations which might be affected are wide-ranging, and the animals generally shun human contact. Only a small percentage of such populations would be affected, resulting in a small overall impact on the wildlife resources in the area.

W-83 The statement on p. 4-47 of the Draft EIS is: "It is likely any private siting effort would meet strong public opposition from residents of any siting area" (emphasis added). This statement is based on experience with other siting efforts, public and private, around the country, as documented in an EPA study (see DEIS reference 87). Also, ADHS encountered public opposition to all the sites analyzed in detail in its siting study. There is no reason to believe that a private company would have any different results.

83-80-000/596

BRUCE BABBITT, Governor

Commissioners:
CHARLES F. ROBERTS O.D. Bisbee Chairman
FRANK FERGUSON JR. Yuma
FRANCES W. WERNER Tucson
CURTIS A. JENNINGS Scottsdale
JOHN J. GISI Flagstaff

Director
BUD BRISTOW

Deputy Director
ROGER J. GRUENEWALD

ARIZONA GAME & FISH DEPARTMENT

2222 West Greenway Road Phoenix, Arizona 85023 942-3000

February 23, 1983

Sonia F. Crow, Regional Administrator
Environmental Protection Agency, Region 9
215 Fremont Street
San Francisco, California 94105

ATTN: Chuck Flippo (T-2-1)

RE: Draft E.I.S. - Arizona
Hazardous Waste Facility

Dear Ms. Crow:

Our Department has reviewed the draft environmental impact statement for the Arizona Hazardous Waste Facility and we submit the following comments. W-84

Specific Comments by Page:

Page 3-17 "Amphibians and Reptiles".

The desert tortoise and the Gila monster are not listed as endangered by the Arizona Game and Fish Department, as stated in the text. The desert tortoise is listed under Group 3 in "Threatened Native Wildlife in Arizona, approved by Arizona Game and Fish Commission 10 December 1982". By definition, Group 3 includes animals "... whose continued presence in Arizona could be in jeopardy in the foreseeable future." The Gila monster is protected from killing under Commission Order 43, (R12-4-443), but is not otherwise listed.

Page 3-18, 1st paragraph.

The spotted bat is no longer listed in "Threatened Native Wildlife in Arizona" and Arizona Department of Game and Fish should read Arizona Game and Fish Department.

Page 4-8, Surface Waters, Mobile Site.

We agree with the statement that "Under these circumstances, the requirement to protect the facility from a 25 - year storm could be inadequate", especially since, as stated on page 3-10, "Northwest Tank, ... could be affected by surface water draining through or near the site."

AN EQUAL OPPORTUNITY AGENCY

The deserts of Arizona are noted for torrential rains of short duration, which result in substantial runoff on even the smallest of watersheds. This runoff causes much natural erosion and could severly damage the proposed facility and result in significant adverse impact to the downstream environments.

Adequate protection from surface flooding must be provided and the 25-year standard is not adequate. We believe that at least protection from a "100-year" storm is needed to ensure a reasonable level of safety, as stated on page 4-9 under "Mitigative Measures".

Page 4-36, Mitigative Measures, Bird Control.

In reference to the protection of birds from poisoning in evaporation ponds, we believe that bird-proof screening is the minimum control measure that is acceptable. Noise makers are generally effective for only short periods of time, as birds become tolerant of them.

General Comments:

Other than the specific problems noted above, the draft E.I.S. appears generally to be adequate and accurate.

Our Department believes that the Mobile site is the most appropriate site for the hazardous waste facility.

We appreciate the opportunity to review this document and we anticipate close coordination between our Department and the Department of Health Services on this matter in the future.

Sincerely,
Bud Bristow, Director

William E. Werner

William E. Werner
Habitat Specialist
Region IV - Yuma

CC: Don Metz, U.S.F.W.S., Phoenix
Planning and Evaluation Branch, Phoenix
State Clearinghouse, AZ 83-80-0007

WEW/cr

W-84 Arizona Game and Fish Department comments were submitted separately. See comments W-23 through W-27.

7[illegible]

Comment Form To Be Completed by Reviewing Agency

State Application Identifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

TO:

Ms. Terrie L. Krieg
Administrative Services Officer
Director's Office
Dept. of Public Safety
P.O. Box 6638
Phoenix, AZ 85005

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety ✓
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

6 Regions

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☐ Proposal is supported as written ☒ Comments as indicated below

1. Is project consistent with your agency goals and objectives? ☒ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☒ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☒ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☒ No

6. Does project adequately address the intended effects on target population? ☒ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary): I am concerned with the project's intended site. Mobile does not appear to be the most appropriate site, given the study by EPA. W-85

Reviewers Signature Terrie L. Krieg

Date 3-2-83

Title Exec. Admin. Asst.

Telephone 262-8469

W-85 Comment noted. The commenter does not give specific reasons why the Mobile site does not appear to be the most appropriate. Consequently, a specific response cannot be given. The analyses presented in this Final EIS may respond to the commenter's concerns.

Comment Form To Be Completed by Review Agency

State Application Identifier (SAI)

83-80-0007 State AZ No JAN 26 1983

TO:

Mr. David Landrith
Executive Director, SEAGO
118 Arizona St.
Bisbee, AZ 85603

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

6 Regions

JAN 28 1983

830021

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☒ No comment on this project ☐ Proposal is supported as written ☐ Comments as indicated below

T7-86

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature Richard V. Francaviglia Date 2/2/83

Title Program Mgr. - Environmental + Community Development Planning Telephone 432-5301

Comment Form To Be Completed by Reviewing Agency

9 6

TO:

State Application itifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

Christopher J. Bavasi, Ex. Dir.
NACOG, Region III
119 E. Aspen St.
Flagstaff, Arizona 86001

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

6 Regions

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☒ No comment on this project ☐ Proposal is supported as written ☐ Comments as indicated below

W-87

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary).

Reviewers Signature

Title Christopher J. Bavasi, Executive Director, NACOG

Date 2-23-83

Telephone 774-1894

Comment Form To Be Completed by Reviewing Agency

State Application Identifier (SAI)

TO:

Robert K. Lane Acting Commissioner
State Land Department
1624 W. Adams, 4th Floor
Phoenix, AZ 85007
Attn: Robert Yount

83-80-0007 State AZ No. JAN 26 1983

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks✓

6 Regions

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☒ Proposal is supported as written ☐ Comments as indicated below

W-88

1. Is project consistent with your agency goals and objectives? ☒ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☒ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☒ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☒ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☒ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature Robert Yount Date 2/16/83

Title Land Manager Telephone 255-4625

Comment Form To Be Completed by Reviewing Agency 11 [illegible]

State Application Identifier (SAI)

83-80-0007 State AZ No JAN 26 1983

TO:

Dale Buskirk
Advanced Planning Section
Dept. of Transportation
206 So. 17th Ave., Rm 310 B
Phoenix, AZ 85007

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

Indian Affairs
Game & Fish
Transportation ✓
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

6 Regions

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☒ No comment on this project ☐ Proposal is supported as written ☐ Comments as indicated below

VI-89

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature L. P. Stingley Date 2/11/83

Title State Planner Telephone 261-7251

Comment Form To Be Completed by Reviewing Agency

State Application Identifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

TO:

Mr. John Blackburn, Exec. Dir.
Central Arizona Association
of Governments
P.O. Box JJ (1810 Main St.)
Florence, AZ 85232

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

6 Regions

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

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☑ No comment on this project ☐ Proposal is supported as written ☐ Comments as indicated below W-90

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature Linda Granado Date 2-7-83
Title Environmental Planner Telephone 868-5874

13 of 16

Comment Form To Be Completed by Review · Agency

TO:

State Application Identifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

Dr. James Sarn, M.D., Director
Department of Health Services
1740 West Adams Street
Phoenix, AZ 85007

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health ✓
Water
AORCC
Land
Parks

6 Regions

JAN 1983
RECEIVED
Division of Health Resources
DHS

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☐ No comment on this project ☒ Proposal is supported as written ☐ Comments as indicated below

W-91

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature Joseph Dykster Date 2-4-83
Title administrative assistant Telephone 1134

Comment Form To Be Completed by Reviewing Agency

14 2 •

State Application Identifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

TO:

Dr. K. E. Foster, Assoc. Dir.
Office of Arid Land Studies
University of Arizona
845 N. Park Avenue
Tucson, Arizona 85719

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies ✓
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks

6 Regions

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☒ No comment on this project ☐ Proposal is supported as written ☐ Comments as indicated below

W-92

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature ____________________ Date 1-31-83

Title ____________________ Telephone ____________________

Comment Form To Be Completed by Reviewing Agency

TO:

Mr. Clinton M. Pattea
Executive Secretary
Indian Affairs Commission
1645 West Jefferson St.
Phoenix, AZ 85007

State Application Identifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage
Health
Water
AORCC
Land
Parks ✓
6 Regions

JAN [illegible] 1983
OF INDIAN AFFAIRS

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☒ No comment on this project ☐ Proposal is supported as written ☐ Comments as indicated below

W-93

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature Clinton M. Pattea Date 1-31-83

Title

Telephone

Comment Form To Be Completed by Reviewing Agency

State Applicatio ntifier (SAI)

83-80-0007 State AZ No. JAN 26 1983

TO:

Mr. Terry B. Johnson
Arizona Natural Heritage Program
30 North Tucson Boulevard
Tucson, Arizona 85716

Indian Affairs
Game & Fish
Transportation
Ag. & Hort.
Arid Lands Studies
Environmental Studies
Public Safety
Emergency Services
Arizona Natural Heritage ✓
Health
Water
AORCC
Land
Parks

6 Regions

FROM: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to the following questions. After completion, return THIS FORM AND ONE XEROX COPY to the Clearinghouse no later than 17 WORKING DAYS from the date noted above. Please contact the Clearinghouse at 255-5004 if you need further information or additional time for review.

☒ No comment on this project ☐ Proposal is supported as written ☐ Comments as indicated below

VI-94

1. Is project consistent with your agency goals and objectives? ☐ Yes ☐ No ☐ Not Relative to this agency

2. Does project contribute to statewide and/or areawide goals and objectives of which you are familiar? ☐ Yes ☐ No

3. Is there overlap or duplication with other state agency or local responsibilities and/or goals and objectives? ☐ Yes ☐ No

4. Will project have an adverse effect on existing programs with your agency or within project impact area? ☐ Yes ☐ No

5. Does project violate any rules or regulations of your agency? ☐ Yes ☐ No

6. Does project adequately address the intended effects on target population? ☐ Yes ☐ No

7. Is project in accord with existing applicable laws, rules or regulations with which you are familiar? ☐ Yes ☐ No

Additional Comments (Use back of sheet, if necessary):

Reviewers Signature Terry B. Johnson Date Feb. 1, 1983

Title Coordinator / ANHP Telephone 323-0867

W-86 through W-94. No response needed.

El Paso
Natural Gas Company

P. O. BOX 1492
EL PASO, TEXAS 79978
PHONE 915-541-2600

March 8, 1983

U.S. Environmental Protection Agency, Region 9
215 Fremont Street
San Francisco, CA 94105

Attention: Chuck Flippo (T-2-1)

Reference: Draft Environmental Impact Statement,
Arizona Hazardous Waste Facility

Dear Mr. Flippo:

El Paso Natural Gas Company (El Paso) operates one of this nation's largest natural gas transmission systems, primarily in the southwestern states, including Arizona. As a member of the industrial community in Arizona, we have followed with interest the planning for a state-owned, contractor-operated hazardous waste facility. In general, we are pleased to see Arizona acting to develop such a facility. We feel it will benefit the citizens of the state, the Arizona environment, and the state's hazardous-waste generators. W-95

We have reviewed the draft environmental impact statement concerning sale of public land to the state for this facility. Since El Paso pipelines are near each of the three sites being considered, we believe the Environmental Protection Agency and Bureau of Land Management should be aware of these points when authorizing a site for the facility and when evaluating the subsequent application for an operating permit:

- For safety reasons and to protect the buried pipeline, co-use of El Paso's patrol roads and parallel co-use of El Paso's right-of-way cannot be permitted. W-96
- El Paso will have to review and approve any plans for road crossings over its pipelines to determine need for additional pipeline protection. We will need specific information as to vehicular weights and axle loads.

We hope this information is helpful. Thank you for the opportunity to participate in the environmental review for the proposed Arizona hazardous waste facility.

Very truly yours,

H Reiquam

Howard Reiquam, Ph.D.
Director
Environmental Affairs Department

jb

W-95 Comment noted. No response needed.

W-96 These issues are addressed in the discussion of transportation risks in Section IV, Public Health and Safety: Spill Risks.

17

United States Department of Agriculture
Forest Service
Region 3
517 Gold Avenue, SW
Albuquerque, NM 87102

Reply to 1950
(FPM)

Date FEB 23 1983

RECEIVED
REGION
7 10 10 AM '83

Mr. Chuck Flippo
U.S. Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105

Dear Mr. Flippo:

We have reviewed your Draft Environmental Impact Statement for an Arizona Hazardous Waste Facility, and concur with the proposed alternative to purchase the Mobile site from the Bureau of Land Management for the facility. We support the need for a hazardous waste facility of this type that would allow controlled disposal or recycling of hazardous materials and remove many of the problems associated with indiscriminate storing and dumping. W-97

Sincerely,

Thomas G. Schmeckpeper
THOMAS G. SCHMECKPEPER
Deputy Regional Forester

FS-6200-11 (8-80)

W-97 Comment noted. No response needed.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
PACIFIC SOUTHWEST REGION
BOX 36098 • 450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102
(415) 556-8200

RECEIVED
REGION IX
MAR 19 10 51 AM '83

[✓ RA]/DRA ______
Referred To T-1
CC: ______
File: ______

ER 83/117

MAR 17 1983

Ms. Sonia F. Crow
Regional Administrator
Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, California 94105

Dear Ms. Crow:

The Department of the Interior has reviewed the draft environmental impact statement for the Arizona Hazardous Waste Facility.

In the main body of the environmental statement, evaluations of impacts on
topography, soils, and geology are largely qualitative and hypothetical. For
example, little or no indication has been given of the probable dimensions or
depths of excavation, heights or designs of embankments, thicknesses or designs W-98
of liners, volumes of earthwork, or sources of fill. The first mention of
specific designs is in an Appendix (pp.D-6 to D-16). It would be useful to
incorporate probable design features into the evaluations of environmental impacts
in order to make such evaluations more quantitative. Information available
indicates that no major mineral resources would be affected on the Mobile site.
The alternate Western Harquahala Plain and Rangeras Plain sites may be in an W-99
area of low temperature-geothermal resources. Small occurrences of iron also
are reported near the alternate sites.

Specific Comments

Page 4-7, paragraph 2: It appears that a leak detection system with a double liner would be the best method of protecting against the release of contamination from the facility. W-100

Page 4-8, Surface Waters: Providing protection from a 25-year storm would be inadequate at the Mobile site. Protection should be provided for a least the 100-year storm because of high intensity thunderstorms that often hit the area. W-101

Page 4-36, Mitigative Measures: To facilitate revegetation in those areas to be cleared for construction activities we recommend that the vegetation be crushed and not cleared. A high percentage of the crushed vegetation will resprout. W-102

Page 4-36, Bird Control: All possible control measures should be investigated as migratory birds will be attracted to open water in desert areas. W-103

We appreciate the opportunity to review and comment on this document. If you have any questions regarding these comments, please contact me.

Sincerely,

Patricia S. Port

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPR
State Director, BLM
Director, GS
Regional Director, FWS
Regional Director, BM
Regional Director, BR

W-98 The reasons more specific design features are not presented in the EIS are explained in Section I.

W-99 Comment noted. Should one of these sites be transferred, the value of mineral resources would have to be appraised and included in the sale price of the land.

W-100 Specific design requirements would be addressed in the facility permit. See Section IV, Ground Water.

W-101 ADHS would to require protection from a 100-year storm. See Section IV, Surface Water.

W-102 Comment noted. The Draft EIS states that the contractor would be instructed to take care not to destroy the roots of shrubs located in those areas which need only temporary clearing for construction activities (DEIS p. 4-36). Crushing, rather than clearing, could be one way of accomplishing this. ADHS would seek guidance from and work with the Arizona Department of Agriculture and Horticulture to ensure that the commitments to protect vegetation are met.

W-103 Experience at similar existing facilities suggests that bird control should not be a problem. If a problem did arise, ADHS would seek guidance and assistance from the Arizona Game and Fish Department to evaluate and implement appropriate bird control measures.

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
PACIFIC SOUTHWEST REGION
BOX 36098 • 450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102
(415) 556-8200

ER 83/117

MAR 1 9 1983

Ms. Sonia F. Crow
Regional Administrator
Environmental Protection Agency
Region 9
215 Fremont Street
San Francisco, California 94105

Dear Ms. Crow:

The following comments were inadvertently omitted from our earlier letter.

On page S-2, Affected Environment, first paragraph, there appears to be a difference in the number of people within 5 miles of the Mobile site. Here you say 25 people live within 5 miles of the site, and on page 3-29, second paragraph, you state that 80 persons live within a 5 mile radius of Mobile. Which figure is correct and does this figure include an Indian population? W-104

On page 2-3, Figure 2-1, you show Interstate 10 leaving Phoenix connecting with Highway 80 south to the Mobile site. Isn't this Highway 85? W-105

On page 3-45, Land Use, first paragraph, the second from last sentence states "Private and other lands are located along the CAP canal . . .". What is the amount of "other lands" and who are the land owners? W-106

On page 3-62, parapraph 6, it states "The U.S. Department of the Interior has listed the bald eagle, Yuma clapper rail, . . .". We feel this should read, the U.S. Department of the Interior, Fish and Wildlife Service has listed the bald eagle . . . W-107

One page 4-40, mitigative measures, ". . . appropriate mitigation measures . . .". The responsible person handling the Archaeology section could explain what is meant by appropriate mitigation measures. Will the cultural resources be avoided, tested for determining significance, subjected a data recovery program or a mixture of the aforementioned measures? It would be more meaningful if the public is made aware of how the appropriate mitigation measures operate. The use of professional jargon in a public publication should be limited as much as possible. W-108

In Appendix K (K-1), again, the EIS is for public review and such usage as Class I and II should be explained, thus avoiding unnecessary confusion for the layman. W-109

Additional Comments:

1. The EIS section concerning archaeology, prehistory, history, and socio-history does not mention the effect of the Project on sacred and religious area as mandated under the American Indian Religious Freedom Act. The EIS should address this area of concern with the Indian Tribes being impacted. W-110

2. The archaeology section of the EIS does not mention whether the National Register of Historic Places was consulted, or if the SHPO was contacted to see if potential resources were listed. W-111

3. The EIS does discuss the availability of access to the proposed areas but it does not consider or mention if these secondary access routes will be upgraded for the X amount of traffic. If the access routes will be improved, then, the right-of-way needs to be mentioned, as it can cause considerable damage to cultural resources. W-112

We appreciate the opportunity to comment on this DEIS.

Sincerely,

Patricia S Port

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPR
State Director, BLM
Regional Director, FWS
Regional Director, BM
Regional Director, BR

W-104 Two different areas are being addressed: a 5-mile radius around the site, and a 5-mile radius around the community of Mobile (which is 6 miles from the site). Twenty-five people live within a five-mile radius of the site itself. Most of the 80 persons who live within a five-mile radius of the community of Mobile would be further than five miles from the site.

The number of Indians in these figures is not known, since census data used to arrive at these figures do not distinguish between Indians and non-Indians. The nearest reservations are outside both five-mile radii.

W-105 At the time the map used in DEIS Figure 2-3 was made, the road segment referred to was U. S. 80. It is now Arizona State Highway 85. The highway connects with the Maricopa-Gila Bend Road, but would not necessarily be an access route to the Mobile site. The likely access route to that site is from the east through Maricopa.

W-106 The sentence referred to should have read "Lands in the jurisdiction category of 'private and other' ..." rather than "Private and other lands ...". The lands referred to in the sentence are right-of-way for the Bureau of Reclamation's Central Arizona Project. The size of this land is shown in DEIS Figure 3-9 (reprinted with corrections in Section II).

W-107 This correction has been noted. See Section II.

W-108 No significant cultural resources have been identified at the sites. It is difficult to specify in advance the measures that would be taken if cultural artifacts were discovered in the future. Depending on the resources identified, mitigation may include mapping of the site, surface collection of artifacts, subsurface testing, and/or excavation. The State Historic Preservation Officer would be consulted to determine appropriate measures if such resources were discovered during construction or operation of the facility.

W-109 Class I is a BLM designation for a cultural resources overview of an area conducted through literature reviews and record searches. As stated in DEIS Appendix K, p. K-2, a BLM Class II Cultural Resources survey is a sample on-the-ground survey. A Class III Cultural Resources survey is an intensive on-the-ground survey covering 100 percent of the study area.

W-110 The Draft EIS identifies sacred and religious areas as well as other Native American cultural resources in the vicinity of the proposed sites. These are presented in

Table 3-6 (DEIS p. 3-26), Table 3-14 (DEIS p. 3-54), and Table 3-18 (DEIS p. 3-71). None of the sacred areas is expected to be adversely impacted by the proposed facility. No comments have been received identifying potential impacts which were missed in the analyses done for the Draft EIS. (See also the response to comment W-112.)

In order to identify and document concerns for cultural resources that have historical or contemporary significance to Native Americans, mail and telephone contacts were made with the Inter-Tribal Council of Arizona, representatives of the Native American tribes of Arizona, and appropriate Federal and State agencies. A summary list of the contact program conducted is provided in Appendix M of the Draft EIS; see DEIS pp. M-3 to M-5.

A summary of the concerns raised in these discussions was prepared but omitted from the Draft EIS. It is reprinted below for the benefit of reviewers. Most of these concerns relate to ground water contamination and transportation-related accidents. There was some concern that the gathering of cholla, greasewood, mesquite beans, and saguaro in the Rainbow Valley area could be impacted. Site visits to the proposed Mobile site indicate that some subsistence plants do grow there (e.g., mesquite beans). Since only a small area of land would be affected by the facility (one square mile), the impact on the ability of Native Americans to gather these plants would not be expected to be significant.

Native American Concerns:

The president of the Inter-Tribal Council of Arizona (ITCA) recommended that contacts be made with all tribal leaders in Arizona since "the process of selection and the implications for use of natural resources and population growth have a potential impact on all tribes." The ITCA also noted that the issue of ground water protection was of particular concern. Contacts were made with the representatives of the Fort McDowell (Yavapai), Papago (Papago), Gila Bend (Papago), Gila River (Pima-Maricopa), and Ak Chin (Papago-Pima) Indian reservations (see DEIS Appendix M).

The chairman of the Papago Tribe forwarded a copy of a Tribal resolution passed on August 6, 1982, objecting to location of a hazardous waste facility site in Rainbow Valley and requesting the Federal government to "refuse the transfer and use of Federal lands within the Valley for such a purpose." The chairman of the Gila Bend Papago did not feel that the proposed facility near Mobile would impact historic or cultural resources, but expressed strong concerns for the possiblity of contaminating the water basins in Vekol and Vasco Washes. Similarly, a representative for the chairperson at Fort McDowell expressed concern over the potential adverse effect of hazardous waste disposal on ground water sources for Arizona in general, and Yavapai ancestral lands in particular. At Ak Chin, the chairperson noted that a number of reservation families continue to gather cholla, greasewood, mesquite beans, and saguaro in the Rainbow Valley. The concern was expressed that the proposed facility would contribute to the depletion of these resources in the area. The governor of the Gila River reservation expressed strong concerns over the transportation of hazardous waste across reservation land because of the potential for accidents, resulting in contamination. He stated that the tribe objected strongly to such action on their traditional homeland.

W-111 As part of the record searches done for the EIS, the Arizona State Historic Preservation Office was contacted (32). No known sites recorded within the project area are currently listed on or nominated to the National Register of Historic Places. The Gila Trail or Butterfield Stage Route has unofficial distinction; the route is marked with interpretive signs and is used by Boy Scout groups as a hiking trail.

W-112 Access is anticipated along existing roads, some of which would need to be upgraded (see Section IV, Public Health and Safety: Spill Risks, under "Risks from Transporting Hazardous Waste".) Since the roads already exist, the impacts on cultural resources due to upgrading of the roads would be expected to be minimal. Paved roads could be seen as making some of the resources near the sites more accessible than the current dirt roads (e.g., the Butterfield Stage Trail, which can be reached via the Maricopa-Gila Bend Road). Improved access could benefit users or potential users, but could also increase vandalism of these resources. Since road improvements would be made only as far as the facility, it is difficult to say whether this limited increase in accessibility would in fact result in greater use of these resources or in increased vandalism.

Where the roads cross BLM lands, an environmental analysis was conducted as part of the process of granting right-of-way. If the right-of-way needed to be extended to provide for the necessary road improvements, further environmental review would take place as part of BLM's process of amending the existing right-of-way agreement. (Similarly, extension of utility lines across BLM lands would require an environmental review as part of the process of granting right-of-way.) The State Department of Transportation would conduct an environmental review for expansion or reconfiguration of State or county roads.

ORAL COMMENTS

A public hearing was held to receive comments on the Draft EIS on Tuesday, March 1, 1983. The first part of the hearing was held in Phoenix at 9:30 a.m.; the second part was held in Buckeye at 7:30 p.m. Court reporters recorded the testimony presented at the hearing. The transcribed record (with corrections) is reprinted here.

Substantive hearing comments are numbered H-1 through H-40. The response to each numbered comment appears beside that comment on the same page.

A Public Hearing to Consider:

DRAFT OF ENVIRONMENTAL IMPACT STATEMENT
For the Arizona Hazardous Waste Facility

Conducted by: The U.S. Environmental
Protection Agency, Region IX,
San Francisco, California

Phoenix, Arizona
March 1, 1983
9:30 o'clock a.m..

MR. MATTHEW S. WALKER, Hearing Officer

Volume I

ANDREA WEAVER- CERTIFIED COURT REPORTER

M. L. SPICER & ASSOCIATES
700 West Campbell
Suite 10
Phoenix, Arizona 85013
602-277-5664

I N D E X

SPEAKERS:	PAGE
RICHARD WRUBLIK	8
RAYMOND ADAMS	31

EXHIBITS		PAGE
No. 1	(Environmental Impact Statement)	4
No. 2	(Notice of Hearing)	4
No. 3	(Map)	11
No. 4	(Let. 9-20-82)	20
No. 5	(Let. 2-8-83)	25
No. 6	(Let. 1-29-81)	26
No. 7	(Article)	28
No. 8	(Let. 1-20-83)	31

March 1, 1983

9:10 o'clock a.m..

The Public Hearing on the matter of a Draft of Environmental Impact Statement, Arizona Hazardous Waste Facility, conducted by the U.S. Environmental Protection Agency, Region IX, San Francisco, California, commenced at 9:~~0~~40 o'clock a.m., on March 1, 1983, at The Arizona Department of Health Services, Conference Rooms A and B, Fourth Floor, 1740 West Adams Street, Phoenix, Arizona, before ANDREA WEAVER, a Certified Court Reporter and Notary Public in and for the County of Maricopa, State of Arizona.

The Hearing was conducted by the Hearing Officer:

Mr. Matthew S. Walker
EPA, Region IX, San Francisco, California

The proceedings follow:

MR. MATTHEW WALKER: Good morning.

We will start this Public Hearing.

My name is Matthew Walker, and I've been designated by the Environmental Protection Agency to preside at this Public Hearing.

This is a Public Hearing to consider a Draft Environmental -- excuse me, Impact Statement on the Arizona Hazardous Waste Facility.

The Environmental Impact Statement has been prepared and notice of this Hearing has been published in the Arizona Republic and the Phoenix Gazette on the 14th of January of this year.

In addition to that a mailing was made of a large number of copies to a mailing list that I'm informed consists of some 2,000 people.

We will not introduce the entire mailing list into the record. I will, however, mark the Environmental Impact Statement itself as Exhibit No. 1 for the purposes of this record and a copy of the notice of the Hearing as Exhibit No. 2.

(Thereupon, documents were marked by Mr. Matthew Walker, Hearing Officer as Exhibit Nos. 1 and 2.)

MR. MATTHEW WALKER: This Hearing today is being record by a Stenographic Shorthand Reporter, Miss Andrea Weaver, of the firm of M.L. Spicer and Associates.

The stenographic record will be

transcribed and a complete record will be submitted as a part of the formal record of this proceeding.

If you wish to address the record, you must have signed one of these registration cards that was made available at the desk as you entered.

There are two boxes at the bottom. One of them says, "I wish to make a statement.". The other says, "Please put my name on the mailing list.".

If you do wish to make a statement, you should check the box saying, "I wish to make a statement." and that card will be handed up to the front table and you will be called upon in order.

It is necessary that we have everyone come to the microphone and speak. For one thing, because we are making a record of it, we need to know who you are, if you're here in a representative capacity, who you're representing, and we need to be able to hear and understand what it is that you have to say.

It's almost impossible to make an adequate record of people speaking from the audience.

Now, the procedure that will be followed on this, is this; we'll hear all of those who wish to speak this morning, we will continue as long as necessary. If the speaking takes considerable length of time, which I do not anticipate, we may need to take a mid-morning recess for the sake of the Reporter.

At the close of the formal part of the Hearing, certain members from the Environmental Protection Agency will be available here for a question and answer period. However, that question and answer period will not be a part of the formal official record of this proceeding.

Those questions and the answers you may receive are for your information and use, but cannot be considered as part of the administrative record of the Hearing, and cannot be relied upon for either support or attack of the Environmental Impact Statement.

Any statements, questions, or other interrogatories that are addressed to the report, addressed to me, we will receive. I may not be able to respond to your questions, after all, I'm only one person, it is a large agency and many of the questions require a collegial decision. However, any interrogatory, any inquiry that is made will be addressed in the final Environmental Statement that will be prepared, and notice of that will be published in the Federal Register, and elsewhere, for your knowledge and information.

If you have signed one of the cards and put on the bottom, "I wish my name to be placed on the mailing list." you will be advised of the final Environmental Impact Statement, by mail, so that you will then have an opportunity to know what is the result of this proceeding and the result of this Hearing.

The method by which the final Environmental Impact Statement is arrived at is somewhat complex since many people are involved and several agencies are involved.

Reports are prepared, briefings, documents are prepared, and submitted, and considered, and the only way I can adequately describe that is that it is a community-type decision, there is no one single person who makes the entire decision. It may be that the Regional Administrator will sign off on it, but obviously, many people participate in the proceedings up until then.

Now, I have one of these registration

cards where someone has asked to speak to the Panel. At the present time I have only one, so that makes my problem of protocol quite simple.

Normally we take elected officials first, and thereafter hear people in the order in which they have signed up.

If there is anybody here who does wish to address us, and to speak to the Panel, please let us know and your card will be checked and handed up here.

At the present time I only have the one card and I will therefore now call on Mr. Richard Wrublik.

MR. RICHARD WRUBLIK: I guess I'm sorry to disappoint a bunch of the people here. They were all hoping that nobody would show up and ask to speak, so that they could adjourn the meeting immediately.

MR. MATTHEW WALKER: Quite the contrary, we were hoping somebody would show up in order to make our trip valid.

MR. RICHARD WRUBLIK: I heard the opposite in there, so maybe the official statement is one way, the unofficial is another.

I have, some of the stuff has been

presented before, but not really because it was not recorded, and I do want some of this stuff recorded on the official record.

I have several objections to the information contained in the Hazardous Waste Report that was made by the EPA.

I feel that there have been some very wrong statements made and we need to get some of them corrected.

~~Of the~~ The first statement that was made in the Environmental Impact Statement on the very first page, which tends to make me wonder if the EPA knows what they are doing, the first statement on the first page says that the site is sixty-five miles from Phoenix.

That absolutely is false. It is not sixty-five miles from Phoenix, it is not fifty miles from Phoenix, it is not forty miles from Phoenix, it's not thirty miles from Phoenix, it's not twenty-five miles from Phoenix. It's between twenty and twenty-five miles from Phoenix. (H-1)

Now, there is a big difference between twenty and twenty-five, and sixty-five miles.

When you start off with the wrong assumptions, a lot of other things happen that are

(H-1) The Draft EIS does not clarify that the 65-mile distance is road miles from central Phoenix. The commenter is correct in that the direct distance ("as the crow flies") between the site and the western suburbs of Phoenix is 25 to 30 miles. Where a mileage figure is used in this EIS, the mileage figure most appropriate for the particular impact being analyzed is given (e.g., road miles are used in assessing transportation-related spill risks).

wrong also.

And I am submitting into evidence, and I have it here if anybody wants to look at it, I have a map that is from the official State of Arizona that clearly shows exactly where the hazardous waste site is, and if you don't believe it, check it yourself, and you will see that we are less than thirty miles from the site today. Right where you're sitting is less than thirty miles. This is a fact.

MR. MATTHEW WALKER: Did you want to make that map a part of the record?

MR. RICHARD WRUBLIK: Yes, I will.

MR. MATTHEW WALKER: I'll mark that as Exhibit 3 for the Record.

Thank you.

MR. RICHARD WRUBLIK: I have a bunch more I have to get from my --

MR. MATTHEW WALKER: Just a minute, let me identify this for the record.

This appears to be a Xeroxed copy of a general highway map, Maricopa County, Arizona, prepared by the Arizona Department of Transportation, 1980, and it has on it some radii which are marked in numbers, and I presume those are in miles.

It will be marked Exhibit No. 3 for this record.

Go ahead, sir.

(Thereupon, a document was marked by Mr. Matthew Walker, Hearing Officer as Exhibit No. 3.)

MR. RICHARD WRUBLIK: When you look at this map then, and you know how close it really is to Phoenix, well then, I think that the people that are being ~~e~~affected weren't properly notified. (H-2)

We're having a meeting tonight in Buckeye, for the Buckeye area. They say, well, that they are so close they have to be notified.

Believe it or not, you are sitting almost as close as they are, probably the same distance. Most of the people in Buckeye live farther away from it than what you're sitting right here today.

There has been no notification telling the people of Tempe. Why weren't the people notified in Tempe, they're only about thirty miles away?

Chandler is only about thirty-six.

And one of the high-risk people that are involved are Sun City, they are only thirty-five miles away. There is a tremendous hazard to them,

(H-2) Efforts to notify the public of the public hearings are documented in Appendix G.

which we brought out very clearly at Mobile, which is backed by the specialist that even wrote the report for this that Valley Fever is a dangerous situation.

The people in Sun City have not lived here a long time and the wind that comes from this hazardous site carrying Valley Fever can come on them very easily.

There are documented stories, reports now in California where tremendous amounts of Valley Fever was moved this length of distance through the air by a bad storm.

I think they are negligent when they are not notifying the people that have definitely a chance of being involved.

I think I know why, they don't want the people of Sun City to know how dangerous it is because they are a very strong, vocal, organized group. But, that doesn't mean they shouldn't be notified.

The whole metropolitan area, one million six, I guess it runs one million six, is supposed to be the population of the metropolitan area, all live within forty-two miles of the place, not sixty-five miles, as is in the report.

This gets down to the very nuts and bolts of the whole report. How much value is it?

I think the best example of what, for what I think it's worth, is one of my teachers in college taught me what the rule of averages was.

He told me, "How do you, what temperature do you people like; seventy, seventy-five, is that a good temperature for everybody?". "Seventy-five, right."

He said, "All right, take that example of seventy-five, that's a reasonable temperature."

All right now, he'd give you another example; "150 degrees, and zero, that's an average of seventy-five, but who wants to be in zero temperature, and who wants to be in 150?"

Well, what happens out here is this; why am I using this example? The report that is in the EPA ~~Environmental Impact~~ Report is primarily made of those types of averages. The people who wrote those reports did not go on-site, they never investigated within the area. There's a few that went on-site, but most of that report is made from a broad area, taking these types of averages. (H-3)

It was not done looking at the site, and the proximity to it.

Now, you ~~I~~ say, do I know that to be true?

(H-3) The use of data from broad areas (regional data) rather than site-specific data is addressed in Section I. Where regional data are used, as in the ground water discussion, the "worst case" values for that region are presented as well as the "average" values.

I've been told this by the people that wrote the report. Both the Department of Health and by the EPA, I'm quoting them. If you don't believe them, I can't help you.

They did not have, the Department of Health here did not have any money when they were assigned the job, and the money that they did get they spent to impress the Legislature.

And what they did there was a crime because the report that they give them showed them all these new electronic things that can take waste and do away with it, which is a good idea, I really think that is a good system.

But, what is actually happening out there (H-4) is that we got a storage dump. That's all we're going to get. There is no electronics, there is no electronic -- this new processing, at all.

They had no money to do their job.

They took and went to books of record and wrote the report on that. Whatever those people said in the report was based on broad areas, cause they only had time to go out to some of the sites and just walk around for fifteen minutes and got in the car and left, so they could say they were on the site.

Use of a "low technology" facility (H-4) as the basis for analyzing impacts in the Draft EIS is discussed in Sections I and III. The impacts of a representative "high technology" facility, using a high-temperature incinerator, are analyzed in this document (see Sections III and IV).

So, this is the type of report that we have.

Now then comes along the EPA and they copy the Department of Health's report. (H-5)

Then you begin to wonder what real value there is in the report. I'm not questioning the capabilities of the people, especially the Department of Health Services, I have nothing against the EPA even, because I know you guys were not given the money and that's the best you can do with zero money; go down to the library and get a couple of reports and write it up.

The total sum budget was less than $10,000. Am I right? I was told it was less than $10,000.

Okay, the next point that I want to bring up is why was the Mobile site chosen when the people knew, really, the involved people knew that it was only twenty-five miles from Phoenix? There has to be a reason, nothing is done without a reason.

And the reason, one of the reasons, very obvious, I was told this by one of the representatives of -- I got it secondhand, you might say, it was from a very reliable person, why

(H-5) The Draft EIS incorporates ADHS's siting study by reference (1). Such use of previously published material is required by Federal EIS regulations to avoid unnecessary duplication (see 40 CFR 1502.21). While the siting study included environmental considerations in its analysis of potential sites, this EIS goes into much greater detail on the potential environmental impacts than did the ADHS study.

was the Mobile site being pushed so hard?

The answer is very simple, that Provident Energy will save one million dollars in construction costs, that's what they are quoted as saying.

MR. MATTHEW WALKER: I'm sorry, what energy company?

MR. RICHARD WRUBLIK: Provident Energy Company.

MR. MATTHEW WALKER: Provident?

MR. RICHARD WRUBLIK: They are talking about putting a refinary in there. If they don't have to have a retaining place for the waste, they can save one million on the construction site, and with the hazardous waste down the road six miles they wouldn't have to do that, and only have to haul it a few miles, instead of 150 miles to the other site that the Department of Health actually recommended.

So, this would cost a couple of hundred thousand dollars a year, so there is a good economical reason why this happened.

The question gets down to why, why wasn't the site recommended by the Department of Health, actually accepted? (H-6)

(H-6) ADHS's study recommended the Western Harquahala Plain site, but also informed the State Legislature that the Mobile (Rainbow Valley) site and the Ranegras Plain site would be

They raised some very good issues in saying why they wanted it: It's remote, it's easy access to the freeway, you can get there in three to six miles from the freeway.

Now, we get down to Mobile, I don't think this was addressed properly in there; in the EPA study. What is it going to cost to put twenty miles of road, twenty miles of, there's dirt road for twenty miles out there and there are people living on it, and in order to bring hazardous waste down you're going to have to bring in a good road, at least twenty million dollars. (H-7)

Now, in our report we were led to believe when they went to the Legislature that the hazardous waste site was going to pay for the roads, there would be no cost to you, the public.

Well, we're having troubles, they are having troubles getting anybody to bid on the site. Am I right? People from the Department of Health are having trouble getting bids on this.

MR. MATTHEW WALKER: Just tell us your problems and then we'll address those.

MR. RICHARD WRUBLIK: Okay, okay, okay.

What is happening is that the cost of the roads is so high that they are now trying to come

acceptable alternatives. The decision to select the Rainbow Valley site was made by the Legislature. The EIS addresses all three sites.

The estimated cost of improving the road is discussed under "Risks of Transporting Hazardous Waste" in Section IV, Public Health and Safety: Spill Risks. (H-7) out with another program to handle it. They are now suggesting that the hazardous waste site, the refin~~a~~ery, Pinal County and Maricopa County will share the cost. (H-8)

Now, what that simply means is that half of that road cost would be subsidized if this goes through.

We're talking about ten million dollars, probably, that will have to be subsidized.

This has not been addressed in this report, whatsoever. Why not?

The next point, the other point that is raised in this report which is, I think is in error or very misleading, maybe not in error, misleading. The biggest hazard ~~is~~ that we have ~~someone~~ is not hauling hazardous waste, and this Department of Health knows this very well because they do not know of hardly any accidents carrying hazardous waste, but there's hardly a week that goes by that we don't have trouble with hazardous material. One of the reasons given for not going to the Harquahala site, by one of the key people in the Senate was he said that the hazardous waste truck would have to go over the canal. One of the main reasons for not choosing the other site. (H-9)

(H-8) Sharing the cost of paving the road between Maricopa and Mobile is one option currently under consideration. The options are listed in the discussion of "Risks of Transporting Hazardous Waste" in Section IV, Public Health and Safety: Spill Risks.

(H-9) The transportation of hazardous material is addressed in Section IV, Public Health and Safety: Spill Risks.

Well, the truth of the matter is that hazardous material will go over that canal (M-10) thousands of times a day and the material in that hazardous material is sometimes more dangerous than the hazardous waste.

The hazardous waste does not represent one percent of the total problem. And the question is, what are we doing to protect the (M-11) public right today from those hazardous materials going across those rivers and potential rivers? Nothing, hardly. It's a real problem.

I also want to put in a document on the record, and I'll give you another copy here just to show you why we're concerned out there, I have a report here from the Buckeye area -- I'll find it here in a minute and give it to you, by the Buckeye Rural Fire Department.

MR. MATTHEW WALKER: Thank you.

Now wait just a minute until I identify this.

This is on the letterhead of the Buckeye Valley Rural Fire Department, dated September 20, 1982, "Subject: Hazardous Waste Materials incident of 8-27-82, at the Rainbow Valley Landfill.". And there are three pages for the

(M-10) See previous comment.

(M-11) See Section IV, Public Health and Safety: Spill Risks, for a discussion of transportation safety regulations and the State's Emergency Response program.

report, and one, two, three, four pages attached to it.

This will be marked Exhibit 4 for the purposes of this record.

(Thereupon, a document was marked by Mr. Walker, Hearing Officer, as Exhibit No. 4.)

MR. RICHARD WRUBLIK: This report happens to be on the law that you're not supposed to dump certain things in the landfill out in Rainbow Valley.

Well, it was dumped there -- stuff against it, restrictions -- it just was lucky that the driver pulled over on the side of the bridge there, and it wasn't on the bridge, it was just near the bridge.

But, the people in Rainbow Valley, anytime anybody pulls off the road people will check it out, they care about their fellow neighbor out there.

And it was just lucky that they did stop because that man was in serious condition from taking, breathing the fumes from this hazardous material, and they were able to call the emergency units and get him in the hospital so he didn't die.

Now, the point I'm after here is that

this is the stuff that's on the books, but it's not being enforced.

We're very much concerned out in that area because there's very serious dangers out there in the soil that we have. The soil that they're going to put this stuff at does not absorb hazardous waste very well. It is very loose and will flow through very quickly. (H-12)

There is nothing in this environmental report -- and we know there is a danger in it -- is that when you store cans under the ground, that soil has got a lot of chemicals in it and can react very violently to certain containers. Those containers also have liquid, and when you get underneath there you're going to have a lot of heat in the summer after awhile and they will activate that dirt. (H-13)

Nothing has been done, and over a period of years we're not saying if it's going to break through, we know it's going to break through. With the work that's being done we're very much concerned it's going to break through and won't go down, and with the lack of money the Health Department has, we're very much scared that that will go down into our water. (H-14)

Release of contaminants into the subsurface soil is discussed in Section IV, Ground Water. (H-12)

See previous comment. (H-13)

If potentially harmful levels of contaminants are detected in ground water beneath the facility, the facility owner or operator must take corrective action as discussed in Section IV, Ground Water. The facility contractor, (H-14)

Now the people in this report said that the, it's about 400 feet of water there, but twenty miles away it's ten feet, on a direct line to Waterman's Wash (phonetic), comes straight on through there into Rainbow Valley, and it gets down to ten feet. I don't know if the Department of Health knew that. Ten feet is all the water is, not 500. (M-15)

It is very easy to contaminate our water in different ways, and that's why we're so scared about it.

Right now the next one I want to raise is ~~the~~ a very important one, I think, to the public. What was the purpose of the hazardous waste site? Why do we even want one in the State of Arizona?

The purpose of it was, is to help the companies that produce it so they'd have a place of disposing of it cheaply, so that they will attract more people to Arizona. I think that was the purpose of the hazardous waste site, and also stop the dumping of it out in the desert, cause we didn't have a place.

Well, the truth of the matter is this; the way they were approaching it with this Mobile site, we are not going to solve the problem,

as operator of the facility, would be responsible for corrective actions at the proposed Arizona facility.

(M-15) Ground water depths in the Rainbow Valley area are discussed in Section IV, Ground Water.

because if that hazardous site has to pay for those roads at twenty miles and they have to put up $20,000,000 just for that alone, the companies know that if their price is too high that they are bidding on this thing, that's why they are having trouble bidding on it, if they know it's too high the company that produces the waste has two choices. No. 1 choice; he has a choice of hauling it out of the state, like he's been doing, and the second thing is; he can find it, put it on -- find a way of handling it on location.

So, what happens here in this hazardous waste site if they did chose Harquahala, or Rane$\overset{g}{\text{f}}$ras Plains, they wouldn't have to pay the cost of the roads over there. You can almost put in a private road, cause it's only three to six miles. Ⓗ-16

Now, that's important to the customer.
/ And I am a customer for hazardous waste sites/ because I'm a farmer and we have certain things that we are supposed to take to the hazardous waste site; the cans that have pesticide, and things in there that need to be disposed of.

Now, what happens then is this; if we had to pay for those roads, and we do not have, according to their own report, there does not

Ⓗ-16

The cost of paving the access roads is discussed in Section IV, Public Health and Safety: Spill Risks, under "Risks from Transporting Hazardous Waste." The road improvement costs to the facility contractor would be similar, since the Western Harquahala Plain site would require that approximately five miles of a gravel road be improved and the Ranegras Plain site would require that approximately six miles of existing road be improved. Use of public funds would not be anticipated at these two sites.

appear to be enough hazardous waste in the state, the cost is going to be prohibitive. Therefore, it would be a lot better and a lot cheaper to go and put the hazardous site by Ranegras Plains and Harquahala, which

The Department of Health recommended for two reasons; the cost is less to get the site on line. No. 2; we are close to the biggest market in the United States, and that's California. If we can get part of the California waste to come in, the company that's putting up the site can make money and also charge the customers in Arizona a lower rate at the same time, which is the purpose of the whole thing.

The purpose of this thing was not to provide this oil refinery with a big tax savings and a dollar savings. That is what we're really dealing with.

Another problem I want to talk about is -- let's see, I got one more document I wanted to put into evidence here, make sure it gets in.

MR. MATTHEW WALKER: Thank you.

This is on the letterhead of the Arizona State University Department of Psychology, dated February 8th, 1983. It is addressed; "Dear

Resident". It is signed; "Kenneth M. Bachrach, M.A.", and the letter is one page and there is a one, two, three, four, five-page attachment to it.

It will be marked Exhibit No. 5 for the purposes of this record.

(Thereupon, a document was marked by Mr. Walker, Hearing Officer, as Exhibit No. 5.)

MR. MATTHEW: WALKER: Go ahead, sir.

MR. RICHARD WRUBLIK: Okay. This report lays out the way that people feel in Rainbow Valley, where the site is going. They feel that the site was chosen politically, they feel it was chosen for the ~~refineries~~ refinery's benefit, it was not taken at all into consideration for their benefit or the people of Phoenix, or the State of Arizona, and I think this report will lay it out.

I don't want to spend all the time going over that report.

Another exhibit I'd like to put in is --

MR. MATTHEW WALKER: Thank you, sir.

This is on the letterhead of the Maricopa County Democrats, Jennie P. Cox, Chairman. It is dated January 29th, 1981.

Is that the right date?

MR. RICHARD RUBLIK: Yes.

MR. MATTHEW WALKER: Signed; "Jennie ~~Cox,~~ or ~~for~~ Jennie P. Cox, Chairman" and there is a one-page attachment.

That will be marked Exhibit No. 6 for the purposes of this record.

(Thereupon, a document was marked by Mr. Matthew Walker, Hearing Officer, as ~~Deposition~~ Exhibit No. 6 Y.)

MR. RICHARD WRUBLIK: I'm not a Democrat or a Republican, I'm an Independant, and I think you can see why I'm standing here. I believe in saying what I believe in, and I don't want to go with one party or the other, but I think the purpose of this report is that the people that know the facts know that the hazardous waste site in Mobile is wrong.

The answer is so simple that it's hard to believe that we're here talking about it. I can take a ten-year-old child, a ten-year-old child, and he would make a decision in ten seconds as to where to put it.

If you have a choice of putting a hazardous waste site twenty-five miles from a metropolitan area, or seventy-five miles from a metropolitan area, which would you do?

We know that this material is dangerous, they don't know a lot of things about what is going to happen out there. Why make the decision at twenty-five miles when you've got a choice of seventy-five miles, at all?

He doesn't even have to, he would know that you'd rather build three to six miles of road, rather than twenty. I don't see where it takes any big brains to see that the Mobile site is wrong.

I also want to put in evidence this document.

MR. MATTHEW WALKER: Thank you.

Excuse me. Just wait a minute, until I identify this.

This is a three-page document and it seems to be a collection of several clippings and this headline; "Do you live in Arizona, do you know what is going on?" And then there's one hazardous waste -- there is a clipping from the Associated Press; "Senate Panel clears Usdane of wrongdoing in taking fee." And then there is another clipping I can't identify, Columbus Dispatch Sun?

MR. RICHARD WRUBLIK: It's in Ohio, I

think.

MR. MATTHEW WALKER: Three pages, and it will be marked as Exhibit 7 for the purposes of this record.

(Thereupon, a document was marked by Mr. Matthew Walker, Hearing Officer, as Exhibit No. 7.)

MR. MATTHEW WALKER: Go ahead, sir.

MR. RICHARD WRUBLIK: Okay. The whole point I'm trying to make here is that I'm not against the hazardous waste site. I do believe, though, that the health of the people in the Metropolitan area should be considered, I do believe that the economics should be considered, I do believe that in order to have a cheap waste, have a good waste site we're going to have to get more hazardous waste, whether we like it or not.

(M-17) If we move to the Harquahala site it saves 150 miles coming in from California, almost 200 miles, it's that much closer, almost 200 miles if you go to the Harquahala/Ranegras Plains site.

I'm hoping, and I know the Department of Health shares this feeling with me, they have said unofficially, which I'm not going to quote any of them who have said it, they would ~~not~~ rather not have the hazardous waste site go in with the storage

(M-17) Differences in the cost of transporting hazardous wastes and PCBs are discussed in the response to written comment no. W-28. Shipping costs for waste generated within Arizona would be considerably lower for the Mobile site than the other two sites. Total shipping costs for PCB waste shipments would be somewhat lower for the alternative sites than for the Mobile site. The overall shipping costs considering both within-state shipments and PCB shipments and pond ~~site~~ stuff, they want a full-~~merged site~~ fledged facility that handles the waste properly and disposes of it, so that we don't worry -- using the electrical system ~~and braking~~ of breaking it down, and really ~~braking~~ breaking it down and recycling it.

This is the feelings of your own Health Department, unofficial feeling.

This type of hazardous waste site that they are proposing is a joke, they don't like it, they will have to eat it, and they will do the best job they can with no money, like they have been doing all along.

But, I do believe that from an economic standpoint and from a health standpoint that Valley Fever out in Rainbow Valley, Mobile and Rainbow Valley, is one of the most dangerous parts in the United States, it's a hot spot. When you go out and dig up the soil and do different things with it, it activates the spores, and when the heavy winds come in, they do come down and go across Phoenix, they come in on the south, northeast, come in that way, and come up and go northeast, which means that people in Sun City -- the people in Avondale and Goodyear were not notified either, and they are right in the path, (H-18)

would be lower for the Mobile site. The costs of shipping hazardous waste (other than PCBs) from out-of-state sources cannot be estimated for reasons discussed in Appendix C of the Draft EIS (DEIS p. C-5). Of course, shipping costs are only one factor that could affect whether the facility has enough business from waste generators to remain economically viable. Differences in the disposal fees charged by facilities in the region, for example, could also be an important factor. Other aspects of the economics involved in siting a facility at the various potential sites were addressed in the ADHS siting study (1).

A discussion of Valley Fever appears in Section IV. (H-18) twenty-five miles away, too. They were not notified. Why don't they have a special meeting for them?

So, I don't believe that the people's health has been really addressed in this whole situation, nor have the economics of it.

Now, you think I'm kidding you, you think that -- I've heard words from both Provident Energy, and from, you know, some of the people that know some of the bidders, and they say they can't afford to put that twenty miles of road in. That costs a lot of money.

The only way it's going to happen is if you and I go and stick our money in our pockets, and through Pinal and Maricopa, and bail them out.

They don't need that, we don't need Provident Evergy that bad to bail them out for that kind of money. We ought to face the reality and let the people of Phoenix know the truth, the health hazard, and let them know how close it is.

If you ask them if it was twenty-five or thirty-five, they would yell, and they said sixty-five, and they go clear around the mountain and they come up with sixty-five miles, but I tell you, spores coming in from Valley Fever don't go around the sixty-five miles, they go the twenty-five and thirty miles.

That's all I have to say.

MR. MATTHEW WALKER: Thank you, sir.

I have one more thing to do.

I have now a copy of the Notice of this Meeting that was sent out in the mail, which was a little different than the one that was published, and I'll add this to the record and mark this as Exhibit 8.

(Thereupon, a document was marked by Mr. Matthew Walker, Hearing Officer, as Exhibit No. 8.)

MR. MATTHEW WALKER: Yes, sir?

MR. RAYMOND ADAMS: I did not speak, but I could say one more thing, if I may.

MR. MATTHEW WALKER: Did you fill out a card?

MR. RAYMOND ADAMS: I filled out a card.

MR. MATTHEW WALKER: So, we have your name?

MR. RAYMOND ADAMS: Yes, sir.

MR. MATTHEW WALKER: Yes, sir. Do you want to come up to the microphone?

MR. RAYMOND ADAMS: My name is Raymond Adams.

MR. MATTHEW WALKER: Do we have Mr. Adams' card?

Thank you. Go ahead, Mr. Adams.

MR. RAYMOND ADAMS: Thank you, sir.

I live west of Maricopa, just a little bit south of the Maricopa -- they call it here the Maricopa County/Gila Bend Highway, if you want to call that dirt road that's half-time underwater, highway -- but anyway, he made a very good speech; the other gentleman did. I think he brought up many many good points.

I would like to say one thing about the Harquahala. I've been noticing on the maps that's in the book here, the site is less than just a very few miles from the Arizona CAP canal, the canal is going to carry water into Phoenix.

MR. MATTHEW WALKER: I just want to point the microphone near you.

MR. RAYMOND ADAMS: Thank you.

The CAP Arizona Canal is just going to be a few miles from the Harquahala site.

I've been to the, two of the meetings in Mobile, and to this one here. I've never heard yet anybody, any of them spoke of the hundred-year floods, and they had the hundred-year tornados.

We also might say we have hundred-year earthquakes, which probably come sometime in the next fifty, maybe 100 years.

But, these things do happen. We never know when, ~~when~~ this short distance from here to there, even though the map shows that the water flows the opposite way, fissures do come into the earth from earthquakes and stuff.

At that point if that should be decided, and not down to the Ranegras Plain, which I agree would be a good site for it, those fissures or whatever could possibly in years to come maybe crack the earth or some way dump this waste site that's just stored, not reprocessed but just stored, into and seep into the Arizona Canal, which is going to be the water supply for Phoenix in the coming years. And they may have to depend upon a lot of that water if the groundwater gets bad and they have a water problem in Phoenix, and Scottsdale, and Glendale, and all. And it could be the Western Harquahala site so close to the CAP Canal, under some freakish nature thing, could become dangerous and hazardous. (H-19)

I think the other site should be considered more than the Harquahala site, even

A discussion of seismicity appears in Section IV, Physical Setting. (H-19) because of that one reason.

And I'd like for just to bring it up as a suggestion in the final consideration for where they're going to put a hazardous waste site.

Thank you.

MR. MATTHEW WALKER: Thank you, sir.

I do not now have before me any cards of people who checked off that they wish to make a statement.

Is anybody here who did check the box saying they wish to make a statement and for some reason that card has not reached us?

I see no one arise.

Has anyone changed his mind and is now inspired and wishes to talk to the Panel?

I see no one arise.

Very well then, I guess we've come to that part of this Hearing, and we will recess this Public Hearing to 7:30 p.m. today, where it will be reconvened in the Buckeye Elementary School cafeteria, 210 South Sixth Street, in Buckeye.

That will be a continuation of this Hearing, not a separate Hearing. It is not necessary to go to Buckeye and repeat what has been said here this afternoon, or this morning.

It will all be part of one record, and will be reviewed and acted upon as a unit.

And with those comments, unless somebody else wishes to address the record, or the Panel, I thank you all for coming, and please have a good day.

If there's anybody here who wishes to engage in an informal question and answer session, there are members of the Environmental Protection Agency here who will be available for that purpose. As I mentioned, however, that will not be a part of the formal record.

(Whereupon, the proceedings were recessed at 10:35 o'clock a.m..)

STATE OF ARIZONA)
COUNTY OF MARICOPA) ss.

BE IT KNOWN that the foregoing Hearing was taken before me, ANDREA WEAVER, a Notary Public in and for the County of Maricopa, State of Arizona; that the proceedings thereto were taken down by me in shorthand and thereafter reduced to typewriting under my direction; that the foregoing 35 pages are a true and correct transcript of all proceedings had upon the taking of said Hearing, all done to the best of my skill and ability.

I FURTHER CERTIFY that I am in no way related to any of the parties hereto nor am I in any way interested in the outcome hereof.

DATED at Phoenix, Arizona, this 11th day of March, 1983.

Andrea Weaver
Andrea Weaver

My commission expires:
August 31, 1984.

A Public Hearing to Consider:

DRAFT OF AN ENVIRONMENTAL IMPACT STATEMENT
For the Arizona Hazardous Waste Facility

Conducted by: The U.S. Environmental Protection Agency, Region IX, San Francisco, California

Buckeye, Arizona
March 1, 1983
7:30 p.m.

MR. MATTHEW S. WALKER,
Hearing Officer

Donna Robare, RPR
Court Reporter

C O P Y

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The Public Hearing on the matter of a Draft of Environmental Impact Statement, Arizona Hazardous Waste Facility, conducted by the U.S. Environmental Protection Agency, Region IX, San Francisco, California, commenced at 7:30 o'clock p.m. on March 1, 1983, at the Buckeye Elementary School Cafeteria, 210 South 6th Street, Buckeye, Arizona, before Donna Robare, RPR, a Court Reporter and Notary Public in and for the County of Maricopa, State of Arizona.

The hearing was conducted by the Hearing Officer:

Mr. Matthew S. Walker
EPA, Region IX, San Francisco, California

The proceedings follow:

MR. WALKER: Good evening, ladies and gentlemen. We will convene this public hearing. This is a continuation of the first part of this public hearing that was convened first in the offices of the Department of Health Services this afternoon. At that time we had the initial session, and this is a continuation of it. It is part of the same hearing.

My name is Matthew Walker, and I have been designated to act as presiding officer for this hearing by the Regional ~~Administration~~ Administrator of the Environmental Protection Agency. This is a public hearing convened to consider the

Draft Environmental Impact Statement for Arizona Hazardous Waste Facility.

You have a copy of it here. There are some copies of it in the back of the room. This copy has been marked in this afternoon's session for purposes of this record. Some other exhibits were also marked and introduced at the session this afternoon. I won't go into them this evening. If you have a need to know about them, come up during a recess later on, and you may examine them. They are part of a public record.

With me this evening, too, from the Environmental Protection Agency is Mr. Phil ~~Bobil~~ Bobel, who is Chief of the Toxic and Waste Management Section, Toxic and Waste Management Branch of the Air and Hazardous Materials Division of EPA, Region IX. Also here, is Mr. Chuck Flippo, who is the Environmental Impact Project Officer for the Arizona Hazardous Waste Facility. There are also in this room representatives of the Arizona Department of Health Services.

We are making a record of this hearing. A stenographic record was made of the hearing this afternoon. It is being continued this evening.

It is necessary if you are going to address us that you register on one of these little cards, available at the door. and check the little box that says "I wish to make a statement." If you do, that card will be brought forward to the front of the room and people will be called upon in the order in which the cards are received. We also require that you come up and use the microphone. Tell us your name. If you are here in a representative capacity, tell us about that. We are not able to make a proper record if people are speaking from the audience.

Notices of this public hearing were published in the Arizona Republic and in the Phoenix Gazette on the 14th of January of this year, and copies of those notices are in the record.

The procedure that will be followed is this. We will hear from the people who have registered. After that there will be a very short recess and there will be a question-and-answer session in an informal manner. Members of the staff are here for that purpose. The question-and-answer session will not be a part of the official formal and administrative record. This is for your information. If you wish to have any specific remarks made a part of the record, it is necessary that you should come forward, use the microphone and get them on the record in that way. Written statements may be received, and they will be given exactly the same weight and the same attention as oral statements made at the microphone.

A VOICE: How long are we going to keep the record open?

MR. WALKER: The 14th of March.

So if you have second thoughts, third thoughts -- if you wish to make any written comments and you are shy about getting up in public or for whatever reasons or if you want to make additional comments on this project, you may send them in writing to the Environmental Protection Agency Region 9, 215 Fremont Street, San Francisco California 94105. They should be marked to the attention of Mr. Chuck Flippo, and his mail code is T-2. That isn't essential, but it will help get it to the right desk if you put that on the envelope.

After the comment period is closed and after the record of this hearing has been prepared, the process for decision is this. A number of people will write briefing documents, summaries of the records, and eventually a final environmental impact statement will be prepared. That environmental statement, as it is finally prepared, is the work of many people. It is possibly signed by the regional administrator, but she is not the one that does all of the work, and all the decision-making issues under her name. Public notice will be given of the issuance of the final draft of the environmental statement.

And those who have registered a check on the box "I wish to be placed on the mailing list," they will be notified by mail of that event. And you will have an opportunity to see what the results of this process may be. It is not a foregone conclusion that the final statement will be exactly the same as the draft statement. I know there is a popular idea to that effect, that these hearings accomplish no purpose except to get people out in the country, but it has been my personal observation on quite a number of occasions the comments received at public hearings do, indeed, have an effect and do sometimes change the final project.

Now that is all of the original comments, or preliminary comments, that I wish to make. The remarks here are being taken down in shorthand by a certified shorthand reporter, Ms. Donna Robare of the firm of M.L. Spicer and Associates. Ultimately, a copy of the transcript will be in the regional office for public inspection if you wish to see what was said. If you have need of a copy for your own use in something less than several weeks, you should make individual arrangements with the reporter who is an independent contractor.

And now I will call on the first person to speak, Mr. Harry Larison.

MR. LARISON: Sir, I have been out of touch with the latest goings-on. If Mr. Gillard and Mr. Wrublik would like to speak before me, I'd appreciate it.

MR. WALKER: Mr. Wrublik.

Mr. Larison, did I pronounce your name right?

MR. LARISON: Yes.

MR. WALKER: All right. Mr. Wrublik, the microphone is yours.

MR. WRUBLIK: Well, last time in Mobile we talked to you about the fact that you don't put good notices out. It had no reaction on you whatsoever. We should have done it ourselves, but I was busy on another project and couldn't do it. And I take this as a crime. You put out a notice on January 14th of a meeting on March 1st. What are you talking about? What kind of idiocy calls that proper notice?

MR. WALKER: Let me interject here we are bound by certain regulations and we are required to give that notice that far ahead of time.

MR. WRUBLIK: We asked at the last meeting in Mobile -- we asked and were led to believe by your representative (M-20) that additional notice would take place before this meeting. It was not done. I don't like that. I'm not talking about your legal -- we were led to believe that you were going to try and improve your notification. Why didn't you tell us you were not going to do it? Has the cat got your tongues? Are you babies?

MR. WALKER: Why don't you just tell us your problem.

MR. WRUBLIK: I'm telling you my problems. I'm trying to get across a point of why apathy takes place. There

(M-20) Additional notice appeared in the Buckeye Valley News of February 24, 1983, as a result of press releases sent out by EPA (see Appendix G). The press releases were the additional notice EPA's representative was referring to at the Mobile meeting.

aren't a lot of people here because of the way you guys operate. Someone asked me to make some comments that can't be here. You go through this very nice formal approach. You set up a citizens' advisory committee, you set it up and they went through and recommended a particular point of view ~~of~~ that the EIS ~~that~~ be prepared for both the land transfer and the facility involved. Everybody agreed. What happens? They are never called back together again; never called back to tell them "Drop dead. Thank you." or nothing. No transfer, no carry-through. What do you think people think? They are being used. That's what they think. And that's what you're doing is using them. Follow the law, yes. / I can't blame you. You probably can't do a thing about it. Is it right? No, it's not. It's a farce, and that's what the whole thing is about.

And we have a report in here. These people want to know. There was a specialist from the university come down and did an emotional impact study on the people of Rainbow Valley. The people of Rainbow Valley have had so many fights, trying to get a break, trying to stop the annexation of Avondale, so it gets tiresome fighting that political crap, following the rules that you make and doing what you want with us.

So I do want to make a point. I don't think when you set up a citizens' advisory committee -- when their recommendation is put through, they should have been called upon for further consultation. Why was the recommendation of the citizens' advisory committee done? The simple fact is this: The EPA they have a quote from the particular section where your people recommended an environmental study be done on site transfer and facility. They recommended it themselves. It wasn't done. Why? The Department of Health Services in Arizona for the same reason they had trouble with the original thing, nobody -- they do not have a recommended site. How can you make an EIS on something that doesn't exist? It's a complete hoax. ~~Let's first make~~ The legislators made a recommendation and ~~make~~ made a decision on site location based on the assumption that they represented a false one. How close it was to Phoenix was false. And what type of facility was going to be there. I haven't found anybody yet that would object to the hazardous waste site that was not promised, but indicated in their presentation, not promised. I'm clarifying that they didn't lie, but it was misleading as heck. (M-21)

What did they show us? They show us pictures of beautiful incinerators to take all this hazardous waste and put it in a little can. That's what they showed the legislature, ~~which~~ but when they ask you what do you recommend: not a darn thing was presented, not a facility at all. Why? We have a right to know why that wasn't done.

The BLM recommended, they were involved with this,

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(M-21) The focus of the EIS is the site transfer rather than the specific design of the facility, for reasons presented in Section I. To the extent that we are able to discuss typical facility designs and the potential impacts that may be associated with such "representative designs," we have done so in this EIS.

and there's a political problem involved here. The BLM was (H-22) insisting that they do an environmental impact study for both the facility and the transfer. The guy involved got transferred. Raised too much hell: kicked him out of the way, because he didn't want to do it. He said according -- they had a right to have this pushed aside. I think that has to be looked at. Why was BLM kicked aside? Why the citizens' advisory committee kicked aside? Why does EPA themselves get kicked aside for their own recommendation? Who has that kind of power to take all three of the committees and tell them to go to hell? Who has that right? Now that's an environmental impact study on people's feelings, and I think that we have a right to know. It affects our thinking about our government and our people. It does affect us, and I think we have a darn good right to know who pulls those type of strings.

And if you don't believe it, we have people that have been at those meetings where this has been said and what has happened, and they wanted this brought out very clearly, that there has been a violation in this area. Then you wonder why there's apathy. Notification six weeks ahead. My God. If you were told something six weeks ahead so you had to be some place and they buried it in the paper to start with, what chance in the world do you have of remembering it. Even if they wanted to be here, they could

(H-22) BLM is a "cooperating agency" and has been a party to all major decisions concerning the EIS. As noted in the previous comment, the reasons the EIS addresses site transfer are stated in Section I.

easy forget that. I think you'd have to agree with that yourself, and what makes me mad, people were there at Mobile on the 14th. We were led to believe they were going to give additional notification -- maybe not promised, maybe I can't take you to court and sue you, but we were definitely indicated that they would try to do this.

Now they also want to go on record because they want to be able to sue the devil out of you people, not the EPA, but they want to be able to sue the State. They want to be able to sue the person running that facility. What do they want to sue you for now? They want to let you know, and they want this very clearly on notice, that there are farms nearby and they are producing, and they will be producing more, vegetables and other crops. If that residue gets on there and anybody is affected, they want to be able to sue you to kingdom come, because they feel you are ignoring the situation. They say, and we have experts that have said at the last meeting in Mobile that contaminants will at certain times come off and be blown into the desert and blown long distances. Now what happens? They say that they did the research. This is somebody's -- they say the prevailing winds are from the south to the east, which means that within 30 miles you can hit Tempe, most of Phoenix, Chandler, Mesa, and all the rest. Now those storms come up and they take those contaminants. And they want it on record that one of the people is an expert from your own field, and he says this can happen. It wasn't recorded that day, and if they have any question, we want to make that person -- that record. I don't know if he had the record here to ~~pick~~ back it up, but they have said, from an expert in their own field, that a contamination can and will be picked up to some degree and be thrown into the air. When that contamination comes down and causes damages, we want to be able to sue you because we are aware of your carelessness -- and I'm not talking about the EPA. I'm talking about the State. I'm talking about Babbitt. I'm talking about the legislators. And I'm talking about the person that's going to operate this facility. And I want it on the record very clear that we're putting them on notice, and we want to be able to sue them. And they better have a lot of coverage.

Now that is important. Now that contamination -- I think you think it's very funny -- that contamination, if it goes over, is going to land on crops, in schoolyards, (H-23) in pools. Now maybe in some cases it will do no damage or you can't tell, but I want to put you on notice that this is going to happen. How much damage we don't know, but we want the people to know that are in the government what is going on.

The potential for contamination of lands on and around a hazardous waste facility is addressed through the permit process, as discussed in Sections IV and V of this document. See Section IV, Air Quality, for a discussion of the spread of airborne contaminants. (H-23)

And I have [illegible] a copy of that report and I have given one to every legislator, both in the Senate and the House. I don't want to come around to election time. If something happens, I want to be able to go out to each one of those districts and ~~say~~ let the people know that their legislator knew what was happening and they went ahead and ignored it. So they just can't come off scot-free like they appear to be doing.

Another point that I want to make. If you look at that map, it shows you now very clearly that it is 25 miles -- I don't think anybody argues it's 25 miles instead of 65 ~~to the~~ -- 25 and you're down with Laveen, and Laveen is in the city of Phoenix down at 51st Avenue and Van Buren. That's how close 25 miles is, believe it or not. Would you believe that the capitol is almost as close as right here. The people down there don't know they're sitting on the thing too.

Oh, I know one thing I wanted -- it was not addressed to the environmental impact statement -- if you look at the layout of the city of Phoenix, you will see that there are reservations stopping the growth to the south, and there is a mountain there and a reservation and some laid-out ground -- not laid out in the sense the farmers use it, but it's owned by the government. Also there in Scottsdale the ~~Your~~ reservation stops you there out to the north to the mountains almost, so as soon as that freeway is done, you are going to see a tremendous movement out to the west whether the people in Buckeye or Rainbow Valley (M-24) like it or not. They are going to come that way. We have a beautiful bridge going across Rainbow Valley, which we appreciate, and I guess they're going to release water again, so we do appreciate that bridge, but with that bridge, we also know we're going to get additional people moving down the road as soon as that highway's finished, and you're going to find that Rainbow Valley can't afford to farm because the water cost is too high. There's 10,000 acres out there. The price of the land is going to be reasonable

Now what's going to happen? We start a community out there in Rainbow Valley. You're going to have a lot of people out there in Rainbow Valley five miles maximum from this site. If those people get contaminated, they want to be able to sue you. Now, if it's wrong, we want to sue the State and the contractor on the site. Again, I think we have the right to put you on notice of that. Isn't that the purpose of this meeting? To put you on notice that the thing can be dangerous? So the people involved make the decision and they make them against statements like this, they have to pay the damages. Of course, that's in a court of law. No telling what would happen there. I hope it's not as bad as what's happening in this environmental impact study ~~to this environment in~~ ~~regards~~ in relation to this hazardous waste deal.

The Draft EIS estimates projected population within 5, 10, and 15 miles of the proposed Mobile site (see DEIS pp. 3-27 and 3-28). The I-10 corridor, along which westward expansion of suburban Phoenix is concentrated, is about 25 miles north of the Mobile site. The project which would likely have the most direct impact on development near Mobile is the proposed Provident Energy Company oil refinery; this is addressed in the Draft EIS (DEIS p. 3-27). (M-24)

I think that the information contained in the EIS, I think, is wrong. In the sense in regard to the roads going out to Mobile there is going to be at least -- I think it's around 45 miles of narrow two-lane road to get that to that site. Narrow two-lane roads are dangerous with big trucks on them. (H-25) The report there -- they said they thought it was more dangerous to go through the city of Phoenix. It exposes more people. That's a comedy. Because ~~Arizona dust~~ hazardous materials travels through there a thousand times as often, and they are exposed to things more dangerous than hazardous waste all the time. (H-26)

So the point I am getting at, within a few years the freeway will be brought into -- it's almost to 99th now -- within a few years when this thing's operational -- within a few years -- then you would have access to the freeway all the way to the other sites, all the way four-lane highways all the way to the site. You don't have to get on a narrow road; don't have to go through the city of Phoenix on a direct basis; much safer than the two-lane road proposed here on this 45 miles. (H-27)

This person wanted this answered. Why was the selection done before the EIS was done? Why do you choose ~~this and~~ the site and then decide to do the environmental impact study, have it already finalized, put in the law. You can't change it. You said I made a decision. Now you find a reason to (H-28)

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(H-25) See Section IV, Public Health and Safety: Spill Risks, for a discussion of two-lane roads.

(H-26) Hazardous material transportation is addressed under "Risks of Transporting Hazardous Waste" in Section IV, Public Health and Safety: Spill Risks.

(H-27) The difference that completion of I-10 would make on the transportation risk analysis is discussed under "Risks of Transporting Hazardous Waste," in Section IV, Public Health and Safety: Spill Risks.

(H-28) See Section IV, Alternatives, for an explanation of the how the EIS process relates to the State's site selection process.

justify it. What type of -- how are people supposed to have respect for legislators when they do stuff like that? Isn't the normal process to find the facts. Then make the decision based on the facts? Here they make a decision and say now find me the facts. How can they justify that? ~~I~~ They want that answered, which I probably won't get anyway. Anyway, they asked for it.

They also want to put in here, which I think we've done other times, why was the site chosen 25 miles from Phoenix when they should have known the danger to Phoenix.

And the dust from the Valley Fever. We had a -- at the last meeting we had an expert in Valley Fever, and he brought out very clearly it's very dangerous, and this person wanted to know why. Why would they expose the entire Valley to Valley Fever at this location when the other site wouldn't do it? (H-29)

Why would they choose a site that in case an accident happens, it's only one-twentieth as safe as the site in the other -- the other two sites. One takes -- was it 10,000 years or 6,000 years for it to leak down and cause any trouble; in one a couple hundred years, based on ~~the~~ their facts. And what are their facts worth? I don't know. (H-30)

See, what happened is that this entire impact statement was put together by people that do reports out there for a whole big region, and they gave a summary of

A discussion of Valley Fever appears in Section IV. (H-29)

This comment refers to the ground water analysis contained in the Draft EIS. A discussion of this analysis appears in Section IV, Ground Water. (H-30) what the whole region was. They didn't tell what was in this particular area at all. They've got things just mixed together that may have no relationship to the site at all, so they felt this is a horrible injustice. Why do people get discouraged with you people, and I'm talking about people in the government.

You do represent Babbitt, don't you?

A VOICE: Yes, sir, I do.

MR. WRUBLIK: I don't dislike the person, really, but I do feel there is a problem here right now, and I think he should have done something about it. I really think that Babbitt should have done something about it. He was put on notice by the people that elected him, and the people that are his lieutenants sent him a very clear message saying what he was doing was wrong, and they didn't have the courtesy to answer back to them.

Am I right, Gillard?

MR. WALKER: Please, just address us in the record. We'll get into trouble if we have this colloquy.

MR. WRUBLIK: I'd like to get you in a little bit of trouble.

MR. WALKER: You might have a --

MR. WRUBLIK: I'm always in trouble. I got 13 kids, and I'm always in trouble.

MR. WALKER: I believe that.

MR. WRUBLIK: They also wanted to know -- I think we addressed this, but they want an answer to it, so I'll put it in the record for them. Why was the site 25 miles from Phoenix selected instead of 90 miles away? Why didn't you put it in the Luke Air Force base where the gunnery range is, ~~and~~ which nobody can get near, and it would be isolated and safe? We pushed that very strong. And we didn't get a good answer. We really didn't get a good answer. We pushed that real hard. Members -- representatives of the committee really pushed that facility. (H-31)

We also know there was two sites in Yuma, well-recommended, but some political pull was done to get it out of that district. This whole thing smells. The whole thing smells from one end to the other end. That's why people get discouraged. It's a political maneuver, nothing based on facts. Emotion.

I am going to have a hard time getting this into the record. I'll try and do it. I can't hardly read their writing.

MR. WALKER: Put the document itself in.

MR. WRUBLIK: I don't know if they expected that to happen. I think it covers primarily -- I think I've summarized it already. Maybe I can put it into the record, but the point they are really trying to make in here, which is one I think I've made to a degree, is that they felt the

(H-31) See Section IV, Alternatives, for a discussion of additional alternative sites.

BLM had the capability of doing a darn good impact study. It is their own land. They would be interested in what happens to it, and they have the interest to do a thorough job. They wanted to do the job, but for political reasons, the site selection was made before on a political basis, and everybody knows that that's been around here. After the political base was done, they did try -- and I will clear up what kind of a study they wanted, which was a proper facility and transfer statement. Then it went over to the Department of EIS, and they recommended that the same thing be done.

And they got a different section here, 10 -- 1501.2 E., so they've done their homework. The thing they're trying to get at why does everybody recommend, from the citizens' committee to the scoping meetings to the BLM to EPA themselves, they all recommend one thing, and it doesn't get done. It's completely overpassed. Just completely ignored. Who is this almighty power? Is there a god here doing this? We want to know who the god is, so we can bow down to him, I guess. So I guess I can't -- I think it would be best to put it in there.

MR. WALKER: Let's put it in. We'll do the best we can with it.

MR. VRUBLIK: Okay. I think I've raised enough Cain for tonight. I'll let somebody else have it.

MR. WALKER: All right. Well, this is a handwritten document, two sides, one piece of paper. And I will put on the sticker that says this is Exhibit 9 on the one side of it, and we'll try to figure out later on what it's supposed to communicate to us. And this will be Exhibit 9 for purposes of this record.

This will be your exhibit. I see no other names on it.

MR. WRUBLIK: I know who gave it to me. Perry (phonetic) gave it to me, but somebody else gave it to her.

MR. WALKER: Well, we can take it on that basis. I just want to know who to identify it with. Okay, I'll identify it with you.

Thank you, sir.

Mr. Bill Gillard.

MR. GILLARD: My name is Bill Gillard, and I'd like to -- the reason I'm here tonight is the same reason you guys are here. You got a job to do. You are hoping we'll hurry up and get it over with so we can all go home. This is one of them things that's cut and dried, just like every other meeting that goes on public notice. They covered it pretty good.

I personally asked how come there wasn't really a notice, a public notice from you people, from any agency, that wasn't given to the Buckeye Valley News. The only information we got was out of the goodness of Mark Shephard, editor, who did put an article about six weeks ago in the paper because he learned it from people in the Valley. And he had also run an article last week in the paper, which I called about, and he informed me he had already written an article.

And I will tell you the reason I'm here is trying to fight for the people out there in the Valley. I've been fighting for a long time. And at that meeting out in Mobile. I can't believe how untrue some of these statements are in this impact -- in your draft here. Hopefully, that's not the final one.

Sir, what is your name again?

MR. WALKER: Please talk to the panel. We're here, all of us, in a representative capacity.

MR. GILLARD: I brought up a fact that we do have dust devils out there, and, believe it or not, the man didn't even know what the dust devil was. I've seen these dust devils as wide as two, three hundred feet travel four (H-32) or five miles at a time. When I talked to him about them, he couldn't believe that these dust devils could actually pick up liquids and transfer them over the area. He's talking, well, some 20 acres within a square mile, which you people have been trying to recommend that the Bureau of Land Management release to the State or sell to the

Dust devils are addressed in Section IV, Air Quality. (H-32)

State. Twenty acres is nothing. What the hell you going to do when you start bringing this stuff in from other states? like California? (H-33) They are going to travel these same routes that they say aren't safe to travel if they put it out there in the Ranegras Plain or Harquahala Valley.

I'm concerned because I don't think our people in government really know what the heck's going on. I personally, as Dick mentioned there, did ask the governor through a resolution through the Maricopa County Democrats that he veto this hazardous waste site after the legislature had passed it, which was strictly political. Mr. Chris -- can't think of his last name -- the representative of the governor -- was there at the last meeting and agreed with me. Sixteen out of the eighteen people on the committee agreed with me that he should veto this, yet all I got from the governor was a form letter saying I would give it some consideration. And I feel when you are giving consideration you're getting something in return. I don't know what he got in return.

I'm concerned because of the fact that even after this goes in, there will be no monitoring or policing -- (H-34) maybe monitoring, but no policing.

Dick mentioned going to court. I've set at the governor's office, and he says, you know, who governs is

(H-33) A discussion of transportation risks appears in Section IV, Public Health and Safety: Spill Risks.

(H-34) ADHS would have primary responsibility for enforcing conditions of the permit at the facility. ADHS staff would regularly inspect the facility, and report their findings to EPA. EPA staff would accompany the State's inspectors or do independent inspections, as needed, to ensure compliance with the Federal requirements.

the judges, you know. You know. This is cut and dried stuff.

The City of Phoenix wants the restrictions eased.

I give this -- hand you a copy of the newspaper here. It shows where about a week ago they wanted to dump more cyanide, cadmium, chromium, and copper -- they want to increase/not the percentage ~~of~~ but the amount. I can understand if there is a larger volume of people and they --

MR. WALKER: This document you have given me could you identify it.

MR. GILLARD: It's out of the Phoenix Gazette, the morning paper -- I believe it's morning -- that we had the hearing out in Mobile on.

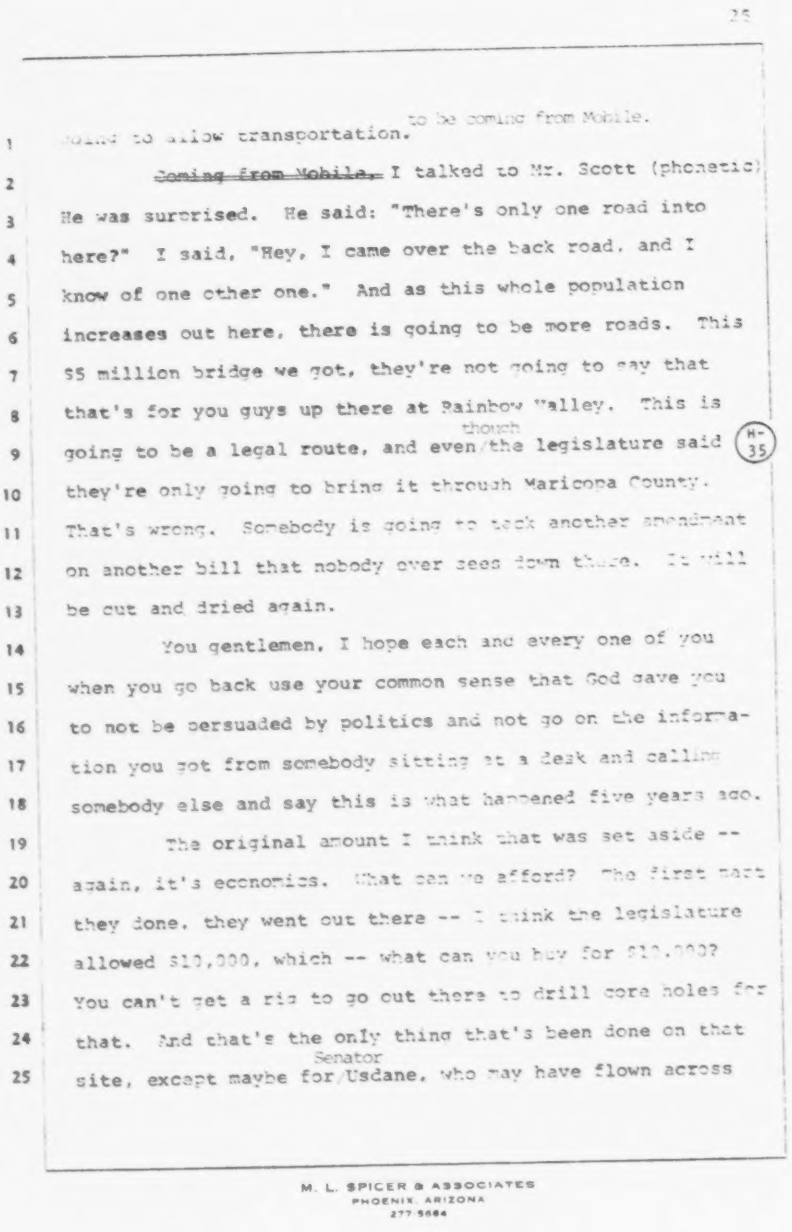
MR. WALKER: And what date would that be?

MR. GILLARD: Was that the 14th of February? I believe the 14th of February in the morning paper maybe.

MR. WALKER: All right. And I will mark this, then, as Exhibit 10 for the purposes of this record.

MR. GILLARD: And so what they ended up saying is if their lawyers feel that this is all right -- not what's right and what's wrong, but what is legal -- they will probably increase the percentage of stuff, poison, they can dump into the river. My God.

I understand today something passed in the legislature where it's going to help us, where they're only



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going to allow transportation. to be coming from Mobile.

~~Coming from Mobile,~~ I talked to Mr. Scott (phonetic) He was surprised. He said: "There's only one road into here?" I said, "Hey, I came over the back road, and I know of one other one." And as this whole population increases out here, there is going to be more roads. This $5 million bridge we got, they're not going to say that that's for you guys up there at Rainbow Valley. This is going to be a legal route, and even though the legislature said they're only going to bring it through Maricopa County. That's wrong. Somebody is going to tack another amendment on another bill that nobody ever sees down there. It will be cut and dried again. (H-35)

You gentlemen, I hope each and every one of you when you go back use your common sense that God gave you to not be persuaded by politics and not go on the information you got from somebody sitting at a desk and calling somebody else and say this is what happened five years ago.

The original amount I think that was set aside -- again, it's economics. What can we afford? The first part they done, they went out there -- I think the legislature allowed $10,000, which -- what can you buy for $10,000? You can't get a rig to go out there to drill core holes for that. And that's the only thing that's been done on that site, except maybe for Senator Usdane, who may have flown across

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277-5684

Access routes to the Mobile site are addressed under "Risks of Transporting Hazardous Waste" in Section IV, Public Health and Safety: Spill Risks. The Legislature's recent amendments to the siting law effectively preclude use of a north-south access route over Tuthill bridge. If the Legislature wished, it could change this law to allow or require use of a different access route. Given the cost of providing access to the site via Tuthill bridge, however, such a reversal of its recent decision is unlikely. (H-35) there and looked it over. Mr. Burton Barr took a real fast trip. Made it in 30 minutes to travel 65 miles And they're cut and dried.

I hope you guys do it and not be afraid of your job and say this is what the hell it is, and let's face facts. That's pretty much it. Thank you.

MR. WALKER: Thank you, Mr. Gillard.

Ruth Kephart.

MS. KEPHART: I'm Ruth Kephart.

First of all, I'd like to say this, that I thought I had so much to say, but our Richard Wrublik pretty well covered a lot of how so many of us out in Rainbow Valley feel. He covered most areas.

I camein a few minutes late and I might have missed something, but I would just like to say that I feel this is just another political maneuver as far as our hazardous waste dump goes. Just like so many other things. A good example would be our Perryville prison.

Now our federal government plus our state legislature they make a lot of really, really strict rules, and they sound pretty good, but when it comes down to them deciding they want to do something, then it's fine ~~they find a way~~ to break their rules. I can't see any one of us going and doing the things they do and get away with it. I think it's really pathetic. Well, go out there and take a ride and see how close the prison is to the schools. There's a strict rule against that.

Anyway, I just wanted to say with the thousands of acres of land that your federal government has and our State owns, and there were, I believe it was ten sites that were considered for this hazardous waste dump, why bring it over here close to people, cattle, schools, our crops. And there are a lot of hazards there. (H-36)

And it seems our legislators could care less. I mean it's a political thing. And they're going to do just as they doggone well please like they always do, no matter how hard we fight.

I've talked to a lot of people out in the Valley there, and quite a few had planned on coming tonight, but they felt why bother, they're going to stick it on us. This is it.

I really think you people ought to seriously think of what you're doing to all of us out here. See, the people out in Scottsdale like good old Usdane and a few other people who have said on TV: Oh, it's perfectly safe. The hell it's safe. It's so safe Usdane doesn't put it in his backyard. He sticks it somewhere else. Why out here? We've got to live too. It's not like you have to put it out here in the middle of everything. I'd really appreciate it if you people would just do some serious thinking,

(H-36) The State siting report (1) discusses the relative advantages and disadvantages of the ten sites studied in the "level three" analysis (see the discussion of alternative sites in Section IV, Alternatives).

because we sure as heck don't want it out there. Thank you.

MR. WALKER: Thank you.

Harry Larison.

MR. LARISON: My name is Harry Larison, and I live at 20402 West Rainbow Trail, Little Rainbow. I've lived there for over ten years now.

And as has been mentioned before, many trials and tribulations have encompassed our area, but none can match the magnitude of what we are about to receive. I came here tonight to learn a little about something, because I have been lax in attending other functions. I thought there may be something new, and I find we are rehashing the same old story.

I am exceptionally displeased with the total lack of community involvement tonight. But I am just overwhelmed that no one in government, other than EPA is represented here today -- or tonight. Certainly I would have expected BLM or the Department of Health Services, at the very least.

The issue that I would like to reiterate is one that I brought up at the Senate Committee hearing at the Capitol, chaired by Senator Usdane. And it is simply that the committee sat there listening to the people that spoke with absolute, total inconsideration. We in the audience were not permitted to smoke -- and I am very uncomfortable without my pipe, so I'll tell you right now, they sat up there and they smoked and they jawed back and forth with one another. Occasionally Senator Usdane would pay attention to a word here or there that was being said by the concerned citizenry. Senator Hal Runyan was so totally inconsiderate and he was so totally lacking in etiquette that he left the meeting -- that he could not even say as he left the meeting: Would you people excuse me. I have someplace else to go. He just plain got up and left. I had the feeling before I came here tonight that this was another one of those situations, and I honestly believe I was right. I do not feel that there is a government agency that is interested in the welfare of the citizenry on any topic -- let alone the hazardous waste dump.

Now having read Mark Shephard, whom I regard quite highly, in his final paragraph he said that hearings of this nature are required by law. He said the past hearings conducted for various purposes hereabouts have meant little or nothing as far as local comments have been concerned. In other words, the elected and appointed officials couldn't care less. The campaign promises the moon. When it comes time to deliver, you don't even listen to us. Public apathy. It's terrible.

I haven't covered anything here that might be of a concern to the Environmental Protection Agency, but I

Will bring up a point that I brought up to Senator Usdane, which I think is quite valid. Having lived in Rainbow Valley for ten years, I have been privileged to witness exceptional storms in the south end of Big Rainbow. Whenever we have severe disturbances over the Baja Peninsula and they come roaring over in lower portions of Central Arizona, they come in over the Maricopas, come in over Mobile right where that site is proposed. They will whistle to the southeast and they encompass the areas of Tempe, Mesa, Phoenix proper, et cetera. I can sit in my yard and drink a cold beer and be in total sunshine and watch the damndest storms you ever saw in that particular area. (H-37)

I mentioned this to Senator Usdane. It was brought up by Mr. Gillard, the ferocity of the dust devils. Those of you that have not seen them I can absolutely tell you they are fierce. In some cases, I have had them pick my chickens up and throw them out of the chicken yard. And I came very close to becoming hit with a child's wading pool from the neighbor's; after another one, I found a brand new washtub in my yard. I don't know where it came from, but it certainly came through the air. Dust devils are miniature tornadoes, and they do suck up dirt and debris. (H-38) They take up moisture, and they will deposit it wherever the winds will take it.

(H-37) See Section IV, Air Quality, for a discussion of high-wind storms.

(H-38) Dust devils are addressed in Section IV, Air Quality.

With these points in mind, it would certainly appear to me that persons of responsible positions would look into this. At the present time -- I hate to bring this up since you're the only representative here, but we are all vitally aware of the nasty mess Ann Gorsuch is in. We are aware of the terrible situation of hazardous waste dumps, and we are aware of the billions of dollars it's going to cost us to clean up that mess. And we are going to build a new one right here. This has to be a laughable situation. ~~we I reason.~~

Acid rain ... We have TV documentaries out of Canada they don't even want shown because they say it's subversive or something -- acid rain is ~~the~~ a real thing.

And I guess in closing I would like to make an suggestion. Since I do live in Little Rainbow and I do not have city facilities, I am required by law to care for my own personal waste, so at my expense I install a septic system and care for my personal wastes. Had I not done this, the law would have refused to permit me to live on the land. In other words, the law said to me as a private citizen, you create a waste so you take care of it. Is it too difficult to ask that if you manufacture and if you produce as a byproduct of your manufacturing a hazardous waste, that you should also have to neutralize it. Why put the problem on us. Thank you. (H-39)

See Section IV, Alternatives, for a discussion of waste reduction. (H-39)

MR. WALKER: Thank you, Mr. Larison.

I have now come to that part of the evening where I have no further cards before me requesting an opportunity to address the panel. Is there anyone who has filled out a card and checked the little box saying they wanted to make a statement and for some reason the card has not reached us.

A VOICE: I believe I did. Maybe I forgot to check the box.

MR. WALKER: What is your name, sir?

MR. THORNTON: Frank Thornton.

MR. WALKER: Do you wish to come up here and use the microphone? There should be a card there. We'll get your card.

MR. THORNTON: My name is Frank -- did I mark it?

MR. WALKER: Yes, you did, sir. We apologize.

MR. THORNTON: My name is Frank Thornton, and I live southwest of Maricopa only seven or eight miles as the crow would fly from the proposed dump site. This is not important -- this particular thing where I live is not important.

What I wish to bring before you people many of these men have brought this subject up. I will touch on it briefly in the things that I have to say.

I believe in the human race. I am interested in the human race. The survival of the human race is very important to me. I am part of that race.

We have been working with chemicals for a long time that we should never have. These chemicals are much too hazardous for the workers or anyone to work with, but that is beside the point. We are working with them.

Now when a person has a very highly communicable disease, what do they do? They put that person in quarantine, separate that person so they will not cause a disease to pass to other people. Now let's use that reasoning in our dump sites. I think this would be a very valid point.

Maricopa is a small town; Mobile is a small town. There's people living there. I would like to see a site selected somewhere in the state of Arizona. I know there's sites that would meet this bill. Isolation is of the utmost importance in this. I would like to see a location somewhere in the state where a minimum of 30 miles to any living humans. And the next criteria that is very important is the water underneath this location. (H-40)

I would like to find a place where it was as deep as possible. If you could find a place where there wasn't any water underneath the land, that would be a better place to put a dump. Water, as I understand it, travels roughly three feet a year -- and I'm not an expert in none

See Section IV, Alternatives, for a discussion of additional alternative sites and the siting criteria used by ADHS in its siting study (1). (H-40) of these fields, but this is what I've been told. If the water is 400 foot underneath the dump site, you're talking about a hundred and twenty to a hundred and fifty years that hazardous material will be ~~under~~ in our water supply.

The human race on this planet we all share this planet together. We all live on it. Our air, our water and our food is already contaminated. We don't need any more contamination in these three categories. The human race must have these three things to live. The water supply has already got many contaminants in it. When have any of you got a breath of good clean fresh air? When did you get that last breath? We are miserably failing. Technology has failed. It can put a man on the moon, but it is not cleaning up our air. It is not cleaning up our water. It is not giving us food that we should have to eat.

This is what I'm interested in. The human race. The survival of -- many of these men and women here have children. Their children and their children's children will not live long enough to get out of this dump site that we are proposing.

The location of it is very important. I would love to sit down with the senators, with the governor, with any of those responsible for it. These sites, all of them, I would like to set in and explain to them that their family's health depends on it. All the human race depends on this. We have been working with too many chemicals too long.

I was raised up in the Midwest, St. Louis, Missouri, to be exact. I have seen all the hazardous waste material that a man needs to see in a lifetime dumped in the Mississippi River. The manufacturers have no regard for the human race. Anything to get rich and anything to get rid of their highly toxic wastes. Dump it in the river. And the next guy down the river, he has to tolerate it. This I have seen. Manufacturers -- the chairman of the board, they don't care. These giant corporations they don't care what happens as long as they produce a product that will sell. Money is the name of the game. They don't care what happens to the hazardous waste.

If a truck driver takes it out and dumps it on the desert or takes it to the city dump and dumps it, they could care less. They have no respect for human life. Their very children and their families are going to suffer as all of us will. None of us are exempt.

I believe your name is Mr. Walker. True?

When did you breathe a good clean fresh breath of air?

MR. WALKER: Well, just give us your comments. We don't want to get into that. I'm here in a representative capacity so my personal views are not important.

MR. THORNTON: Okay.

I live out in the desert by choice. I could live most anywhere that I wish to, but I live there by choice. I like it for its quiet. The air still is fairly good, and at times the pollution out of Phoenix comes out our way and it is something else. Our eyes burn. You don't have to guess whether we're being polluted or not. This hazardous dump will only add to it unless all people work together.

It's going to take patience, lots of patience with the governor and with the senators, representatives, all men in the government. It's going to take lots of patience, but I don't think anything is cut and dried. When it comes to the human line, it can always be altered. It can be. It should be.

A site can be selected if all the people -- I'm disappointed. I was in hopes this evening this building would be filled to overflowing with people concerned. Evidently, they don't care for their health. I care for mine, and I am interested in your health.

Isolation is the point that I would love to make. Isolate this dump site to where it will not harm anyone, any human life.

I thank you, Mr. Walker.

MR. WALKER: Thank you, Mr. Thornton.

Is there anyone else who checked the box on the card saying they wished to make a statement and for some reason we have not received the card?

I see no one arise.

Has anyone been inspired by the previous speakers and has changed his or her mind and wishes to address the panel who didn't check the box?

I see no one arise.

Very well, then. I think we have come to that part of this hearing where the public part of the session will be closed. As I stated earlier, the record will be kept open for written comments until the close of business on the 14th of March, 1983. What day is the 14th of March? That's Monday. Now this must be received in the regional office at 215 Fremont Street, San Francisco, California 94105 by the close of business on that day. It will not be sufficient to simply mail them on that day. They may not then be included in the record. In order to do so, we might have to reopen the whole subject, and it would result in consequences that you might not care for. So if you wish to have your remarks included in the written record, be sure you get them to the regional office by the close of business Monday the 14th of March, 1983.

After the record is closed, we have received the transcript, and we have reviewed all of the comments, briefing documents will be prepared and submitted to the regional administrator and to others for review, study, and final decision. For those people who have checked the box saying they wish to have their name placed on the mailing list a notice will be sent to them of the final environmental statement, impact statement, and at that time this procedure will have been concluded. And with those remarks I think we will conclude our public session here.

I have just received from Mr. Wrublik a second copy of the map that he introduced this afternoon and which was then marked as Exhibit 3. This one will be marked as Exhibit 11 for the purposes of this record. And attached to it is a four-page statement that appears to be xeroxed.

I wish to add my personal statement here. Although the speakers were not numerous, they were eloquent, and your comments have been considered and will be considered further. I don't know what the final decision is going to be. Some of you say that you do. I don't. I do know from past experience that quite frequently these public hearings do affect the final decision. This may be the case this time. If it is not, it is not because of any lack of eloquence on your part. And it is not necessary that you fill the hall in order to be eloquent. We appreciate your statements. We appreciate your courtesy and the comments you have made to us.

Thank you very much and have a good evening.

(Thereupon, the proceedings were concluded at 8:50 p.m.)

I, DONNA ROBARE, RPR, hereby certify that the proceedings taken in the foregoing entitled matter are contained fully and accurately in the shorthand record made by me thereof, and that the foregoing 39 typewritten pages constitute a full, true, and accurate transcript of said shorthand record, all done to the best of my skill and ability.

DATED this 5 day of March, 1983.

Donna Robare
Donna Robare
Court Reporter

HEARING EXHIBITS

The following documents were submitted as exhibits at the public hearing on the Draft EIS.

Exhibit 2
Rainbow
Valley, AZ
1 Mar 83

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

14 JAN 1983

TO ALL CONCERNED PERSONS:

The Environmental Protection Agency (EPA), Region 9, has prepared an Environmental Impact Statement (EIS) on the proposed sale of federal land to the State of Arizona for the purpose of developing a hazardous waste management facility. The Arizona Department of Health Services (ADHS) proposes to purchase a 1-square mile parcel of land near the community of Mobile, Arizona, for the facility.

AVAILABILITY OF THE DEIS

The Draft Environmental Impact Statement (DEIS) has been prepared in compliance with Section 102(2)(c) of the National Environmental Policy Act. The DEIS will be available for distribution to the public and other government agencies on or about January 20, 1983. A summary of the DEIS will also be available upon request. Persons wishing to review the draft EIS or the summary should request a copy from:

U. S. Environmental Protection Agency
Region 9
ATTN: Chuck Flippo (T-2-1)
215 Fremont Street
San Francisco, CA 94105

You may also phone your request to EPA at (415) 974-8128 or ADHS in Phoenix at (602) 255-1162. A limited number of copies will also be available at a public meeting to be held in Mobile (see below).

Copies of the DEIS will be available for public review at EPA offices in San Francisco and Washington, D. C., as well as at depository libraries and government agencies in Arizona. A list of these libraries and agencies is attached.

PUBLIC MEETING

EPA, in cooperation with the U. S. Bureau of Land Management and ADHS, will hold a public meeting on Thursday, February 17, 1983, so that interested persons may meet with agency representatives to discuss the contents of the EIS and answer questions about the document. The purpose of the meeting is to present information rather than to receive formal comments on the DEIS. Two public hearings have been scheduled to receive oral and written public comments at a later date (see below).

The public meeting will be held in the Mobile Elementary School, 14 miles west of Maricopa on the Maricopa-Mobile Road, between 7:30 and 9:30 p. m. The meeting will be in an "open house" format. A short opening statement will be made to summarize the contents of the EIS. Afterwards, persons with specific concerns or questions will be able discuss them individually with agency representatives.

PUBLIC HEARINGS

Public hearings on the Draft EIS will be held on Tuesday, March 1, 1983, at these times and places:

9:30 a. m.   Arizona Department of Health Services
                Conference Rooms A and B, 4th Floor
                1740 West Adams Street
                Phoenix, Arizona

7:30 p. m.   Buckeye Elementary School
                Cafeteria
                210 South 6th Street
                Buckeye, Arizona

All persons are invited to express their views at these hearings either orally or in writing. Oral statements should summarize extensive written materials so that there will be time for all interested persons to be heard.

Written comments may also be sent to EPA Region 9 at the address given below. The Agency will receive written comments for a period of 45 days after notice of the DEIS appears in the Federal Register on or about January 28, 1983.

FOR FURTHER INFORMATION, CONTACT:

Chuck Flippo, Environmental Protection Agency, Region 9, 215 Fremont Street, San Francisco, CA 94105; (415) 974-8128 (Commercial); 454-8128 (FTS).

Attachment

DRAFT EIS

ARIZONA HAZARDOUS WASTE FACILITY

List of Depositories

U. S. Environmental Protection Agency
Region 9
Library/Information Center
San Francisco, CA 94105

U. S. Environmental Protection Agency
Public Reference Unit, Library
401 M Street SW, Room 2922
Washington, DC 20460

U. S. Bureau of Land Management
Phoenix District Office
2929 West Clarendon
Phoenix, AZ 85017

Arizona Department of Health Services
Library
1740 West Adams
Phoenix, AZ 85007

Arizona Department of Health Services, Northern Regional Office
2501 North Fourth Street
Flagstaff, AZ 86001

Arizona Department of Health Services, Southern Regional Office
403 West Congress
Tucson, AZ 85701

Arizona Department of Library, Archives, and Public Records
State Capitol Building
Phoenix, AZ 85007

Central Arizona Association of Governments
1810 Main Street
Florence, AZ 85232

District IV Council of Governments
1020 Fourth Avenue
Yuma, AZ 85364

Maricopa Association of Governments
111 South Third Avenue
Phoenix, AZ 85004

Northern Arizona Council of Governments
119 East Aspen Street
Flagstaff, AZ 86001

Pima Association of Governments
405 Trans-America Building
Tucson, AZ 85701

Southeastern Arizona Governments Organization
118 Arizona Street
Bisbee, AZ 85603

Clifton City-Greenlee County Library
Riverside Drive
Clifton, AZ 85533

Cochise County Library
6 Main Street
Bisbee, AZ 85603

Flagstaff City-Coconino County Library
11 West Cherry
Flagstaff, AZ 86001

Maricopa County Library
3375 West Durango
Phoenix, AZ 85009

Miami Memorial-Gila County Library
1052 Adonis Avenue
Miami, AZ 85539

Mohave County Library
219 North Fourth Street
Kingman, AZ 86401

Nogales City-Santa Cruz County Library
548 Grand Avenue
Nogales, AZ 85621

Pinal County Free Library
1301 Pinal
Florence, AZ 85232

Prescott Public-Yavapai County Library
215 East Goodwin Street
Prescott, AZ 86301

Roxanne Whipple Memorial-Navajo County Library
420 West Gilmore
Winslow, AZ 86047

Safford City-Graham County Library
808 Eighth Avenue
Safford, AZ 85546

St. Johns-Apache County Library
75 West Cleveland
St. Johns, AZ 85936

Tucson Public-Pima County Library System
200 South Sixth Avenue
Tucson, AZ 85729

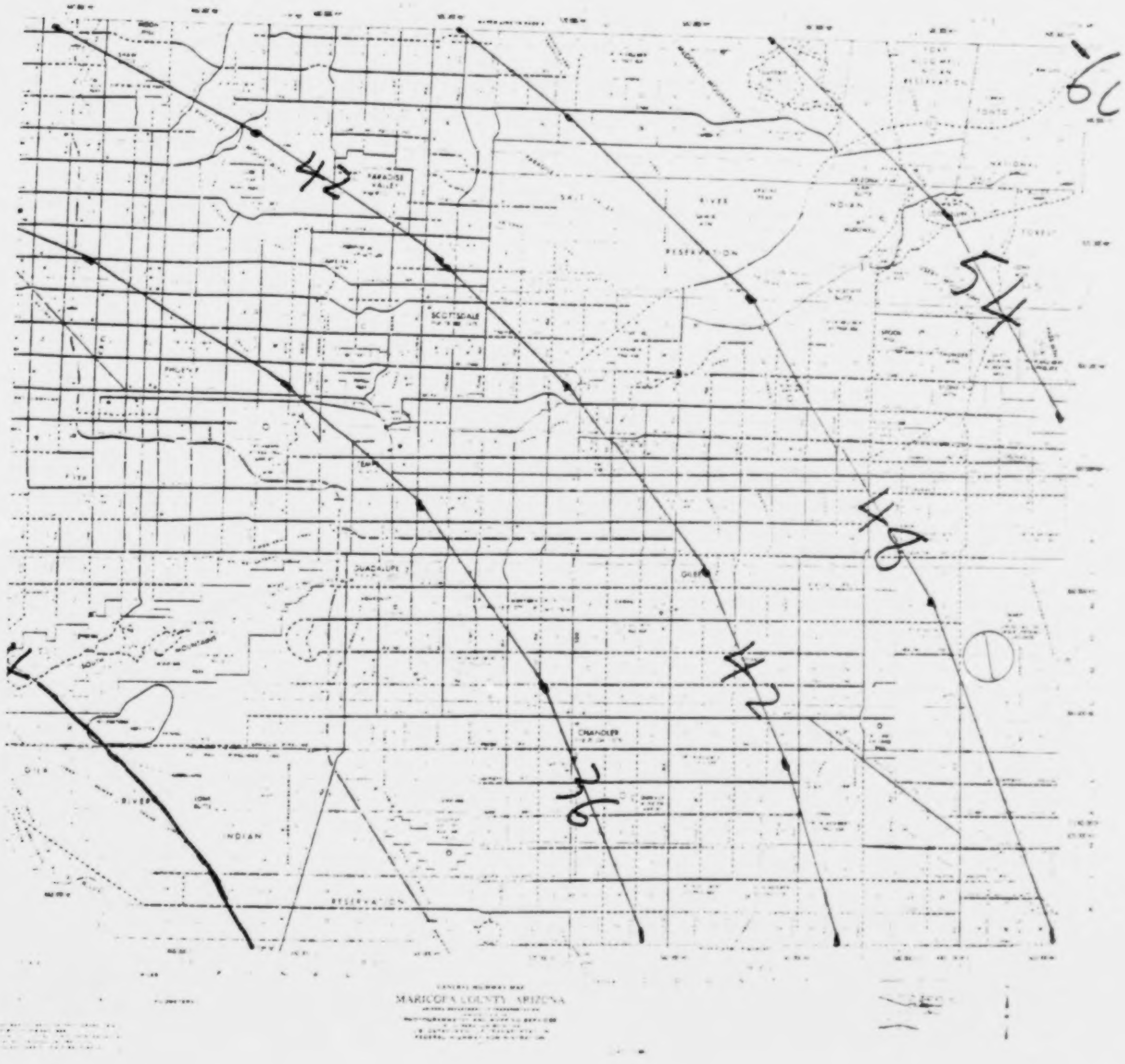
Yuma City-County Library
350 Third Avenue
Yuma, AZ 85364

Arizona State University
Documents Service
Hayden Library
Tempe, AZ 85281

Northern Arizona University
Library
Flagstaff, AZ 86001

Health Sciences Center Library
University of Arizona
Tucson, AZ 85724

Exhibit 3
Rainbow
Valley, AZ
1 Mar 83
MW


60
42
54
48
42
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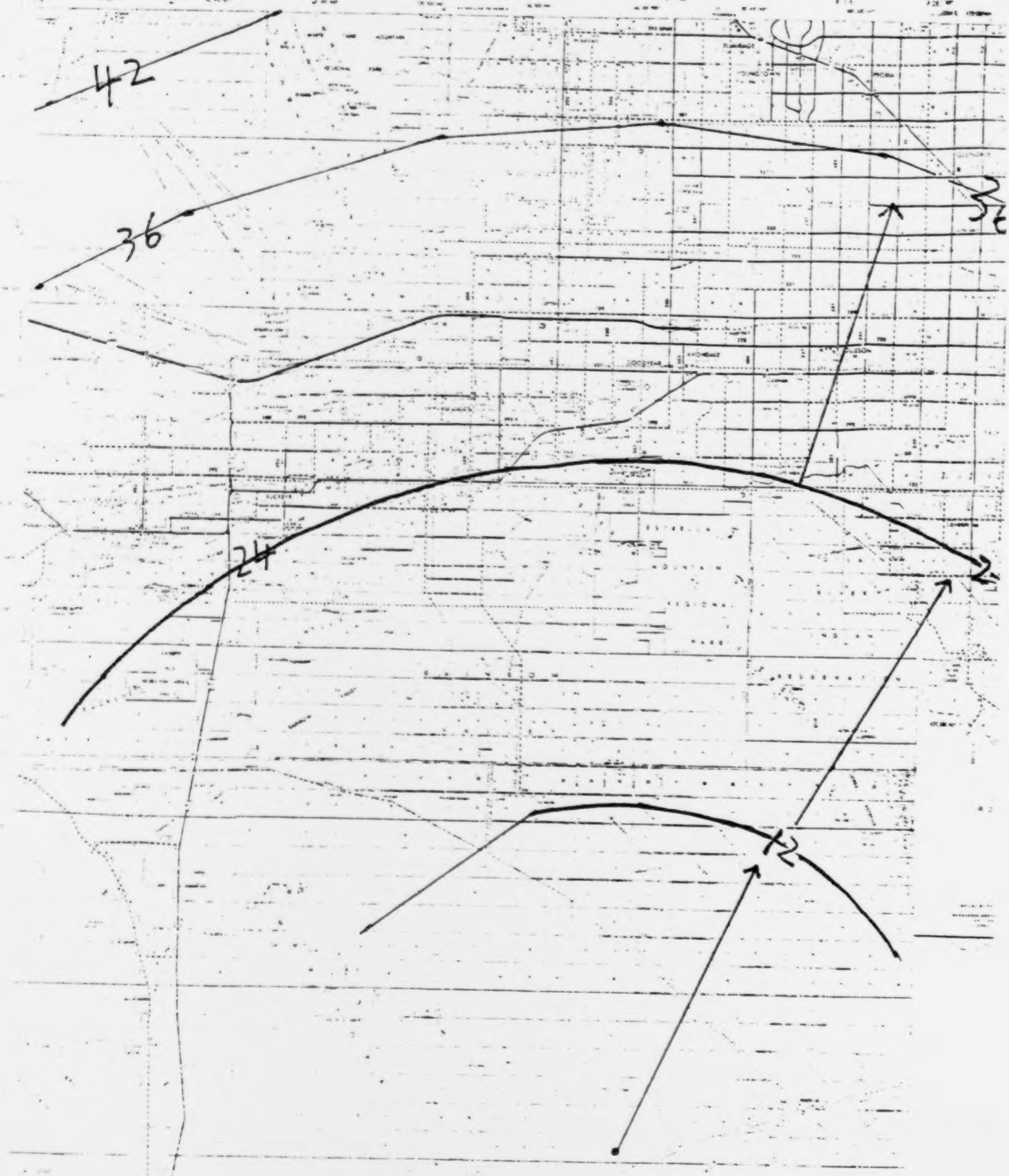
PARADISE VALLEY
SCOTTSDALE
SALT RIVER
INDIAN
RESERVATION
GUADALUPE
CHANDLER
GILA
RIVER
INDIAN
RESERVATION
GENERAL HIGHWAY MAP
MARICOPA COUNTY ARIZONA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36
24
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12

Exhibit 4
Rainbow
Valley, AZ
1 Mar 83
MJ

BUCKEYE VALLEY RURAL VOL. FIRE DIST.

P. O. Box 75
Buckeye, Arizona 85326

Chief Darrel McCarty
386-2005 932-7150

Sec/Treas Robbie Sorrelle
386-2617

September 20, 1982

Subject: Hazardous Materials incident of 8-27-82 at the Rainbow Valley Landfill

I would like to bring to your attention the fact that on August 27th an incident developed concerning Hazardous Materials at the Maricopa County Landfill in Rainbow Valley, that could have easily cost a Waste Management truck driver his life.

It is presumed that the driver, Mr Rod Gates in truck #290, at some place along his route, picked up some materials which developed into a potentially deadly situation. Upon arrival at the landfill and while preparing to dump his load, the driver was met by smoke coming from the rear portion of the load. The driver apparently inhaled some of the smoke and began feeling the adverse effects of it. The load was dumped and the waste management truck driven away by the driver. Upon reaching a point approximatly six miles Northwest of the landfill, Mr. Gates was too overcome by the inhaled smoke and fumes to continue further and chose to stop and abandon his vehicle.

A passerby (Mr. Clarence Hovland) of Rainbow Valley stopped to inquire if help was needed at about 10:20 AM. Mr. Gates mentioned "Hazardous Materials" to Mr. Hovland and appeared to be in severe discomfort, but declined help when asked if he needed an ambulance. Mr. Hovland determined that it was prudent to notify the Maricopa County Sheriff Office and also requested an ambulance be dispatched to the scene. M.C.S.O. requested an ambulance and also notified the Ariz. Dept. of Public Safety, requesting hazardous materials assistance. Upon returning to the scene, Mr. Hovland discovered that Gates had been picked up by another individual who began transporting him to West Valley Emergency Medical Center, ignoring the request to wait for the arriving ambulance.

Upon the arrival of the ambulance and with the victim gone, the ambulance called for fire crews and the road was blocked off. Fire crews responded from both the North and South sides of the incident. When D.P.S. arrived the vehicle was approached for investigation. The vehicle was found with the engine still running and the radio on. Personnel could get no response from the Waste Management base station. When no apparent problem could be located at the vehicle, the investigation was moved to the landfill site. The load in question was located and a search begun. A crushed plastic container was discovered containing a small amount of a substance thought possibly to be Muriatic Acid, along with other containers of chemicals improperly disposed of. In the same portion of the load was other materials consisting of combustibles, metal shavings, oily rags, etc. There was evidence of earlier combustion, but at the time of discovery there was no longer any fire requiring extinguishment.

By this time OSHA, and the Hazardous Waste Division of the Az. Dept. of Health Services were involved and at the scene. The suspected materials were contained and removed for analysis.

My concerns and recomendations are several.

First: When the Rainbow Valley Landfill was opened it was designated for non commercial use only. I am interested in learning what brought about the change to allow commercial use. I recomend that commercial use of this landfill be discontinued.

Second: In the enclosed copy of the Maricopa County Landfill letter to Mr. Esterbrooks, there is no mention of the crushed plastic container, which to my knowlege has not had its contents analysed yet. There is also no emphasis placed on the toxicity of the material involved or the severity of the potentially deadly situation to the driver. I wonder really how close he came to losing his life? Would it have taken just one more breath of the smoke? We will never know that answer and I am sure that the driver would not care to be involved in further research. I can understand the Landfill Departments desire to downplay the situation. Maybe if I were in their position I would not want to make waves either. One more reason to close the site to commercial use.

Third: I am appalled at the letter to Unidynamics Phoenix Inc. requesting their cooperation in this type of situation. Really now, what kind of corrective action is that? I beleive there are tougher penalties for an improper turn at an intersection. I would recomend penalties more in line with the potentially deadly situation created.

Fourth: I am sure that the industry in question was aware of the proper method of chemical disposal, particularly in light of the length of time the industry has been in operation in this area. If industry will not comply with chemical disposal regulations, maybe they should be monitored, of course at their expense.

I am asking for your support from a legislative point of view in preventing this type of incident from occuring again, and would like to know what your response is to this issue, also what actions your office may be taking with regards to this situation.

Sincerely

Chief McCarty

Enclosures included.

Copies to.
Gov. Bruce Babbitt
St. Fire Marshal, Paul Saunders
Az. Corp. Comm. Jack Vaughn
Az. Dept. of Hlth. Svcs. Norm Gumenik
Rep. Jim Hartdegen
Rep. Renz Jennings
Rep. James Ratliff
Rep. Bob Denny
Sen. Polly Getzwiller
County Supervisor Ed Pastor
County Engineer Bob Esterbrook
Management, Unidynamics Phoenix Inc.

NUR S

MARICOPA COUNTY LANDFILL DEPARTMENT

3325 West Durango Street
Phoenix, Arizona 85009

(602) 269-2681

DATE September 2, 1982

MEMO TO Mr. R. C. Esterbrooks, Director of Public Works & County Engineer

SUBJECT INCIDENT AT RAINBOW VALLEY LANDFILL

The following is a recap of what happened on Friday, August 27, 1982. At approximately 11:45 a.m. I received a call from the Maricopa County Sheriff's Office (westside) reporting a possible problem at the Rainbow Valley Landfill. The deputy said an unknown fume asphyxiated a truck driver after leaving the Landfill at a location just north of the Tuthill Road Bridge. The truck driver is an employee of Universal Waste Company.

At approximately the same time I notified Mr. Manny Garcia to dispatch him to the landfill. Both Manny and I were unable to contact the landfill attendant.

Approximately at Noon I recalled the Sheriff's westside dispatch, confirming the report and the deputy said emergency fire truck and rescue were on their way to both locations. In addition, the Department of Public Safety was also summoned.

D.P.S. notified the Department of Public Safety Watch Commander in which identified the situation as a "Hazardous Materials Emergency" initiating the response plan and notification of jurisdictional authorities.

The following arrived at the Rainbow Valley Landfill within a short time thereafter. The landfill was closed at approximately 12:30 or 1:00 p.m. to all commercial and private citizens.

Mr. Nick Sciarro - Maricopa County Landfill Department
Mr. Manny Garcia - Maricopa County Landfill Department
Mr. Steve W. Rhodes - Industrial Commission, OSHA's Industrial Hygienist
Mr. Norm Gumenik - ADHS Hazardous Waste Specialist
Waste Management of Phoenix - Spill Coordinator
Chemical Waste Management Inc. (Phx.) - 2 man Hazardous Waste Removal team
Volunteer Fire Department - 4 man team
Department of Public Safety Officer - Highway Patrol

Findings:

No Maricopa County Personnel injured or asphyxiated.
Arizona Department of Health Services and OSHA representatives recommended undetermined dangerous waste be removed from Landfill.
ADHS, through phone dispatcher of Waste Management of Phoenix, requested their parent company to remove the waste.
Removal of waste occurred at approximately 5:15 p.m., August 27, 1982.
Reexamined landfill; found no further problem.
Resumed landfill covering of remaining exposed household waste to comply with cover regulations.
Secured landfill at approximately 6:30 p.m., August 27, 1982.
Resumed operations August 28, 1982 at 8:00 a.m.
Condition of truck driver (hauler) unknown.

Waste found on site:

Condition of containers - unrinsed, not crushed, not punctured.
Contents - Perchloric Acid
Fluorinert
Electric liquid
Label with company name delivered - Unidynamics Phoenix Inc.
1000 Litchfield Road
Goodyear, Arizona 85338

Note: Attached is a letter of notification from us to Unidynamics Phoenix Incorporated. Also photos taken of containers.

Nick Sciarro
Nick Sciarro
Landfill Administrator

NS:mar

Enclosures

MARICOPA COUNTY LANDFILL DEPARTMENT

3325 West Durango Street
Phoenix, Arizona 85009

(602) 269-2081

September 1, 1982

Unidynamics Phoenix Inc.
1000 Litchfield Road
Goodyear, AZ 85338

Gentlemen:

On Friday, August 27, 1982, a Waste Management of Phoenix garbage hauler was asphyxiated by chemicals that had been illegally dumped in a refuse container and then delivered to the Maricopa County Rainbow Valley Landfill.

Mr. Norm Gumenik, a Hazardous Waste Specialist for the Arizona Department of Health Services, determined that the items delivered to the landfill were improperly rinsed and disposed of, causing the Waste Management of Phoenix employee to be overcome by the fumes.

Containers disposed of at the Rainbow Valley Landfill were identified with your address on the container as perchloric acid, fluorinert and an electric liquid. The hazardous waste removal team from Chemical Waste Management Inc. removed the wastes for proper disposal and analysis.

Maricopa County Landfill policy and Arizona Department of Health Services regulations prohibit the improper disposal of these wastes. Proper disposal measures can be determined by contacting the State Health Department. Your cooperation in prohibiting further disposal of these products at our landfill will be greatly appreciated.

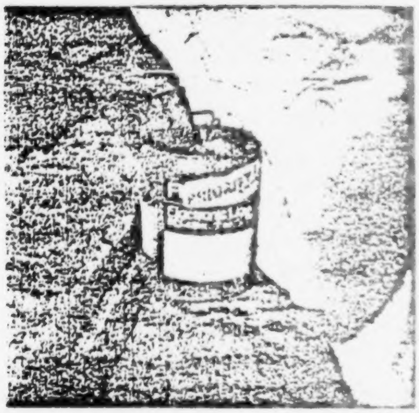
Very truly yours,

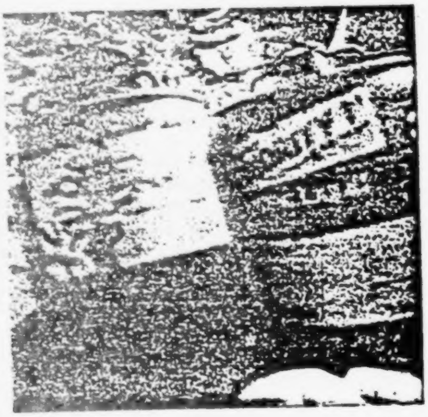
R. C. ESTERBROOKS, P.E.
DIRECTOR OF PUBLIC WORKS
AND COUNTY ENGINEER

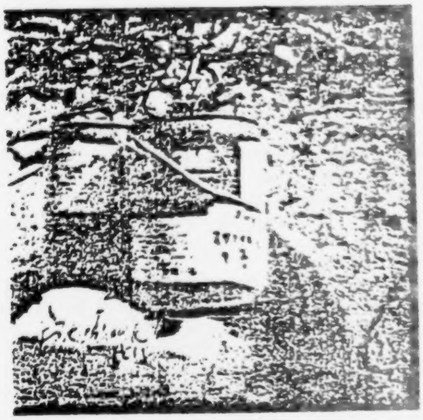
Nick J. Sciarro

Nick J. Sciarro
Landfill Administrator

NJS:cf







See other side.

Exhibit 5
Rainbow
Valley, AZ
1 Mar 83

ARIZONA STATE
UNIVERSITY
DEPARTMENT OF PSYCHOLOGY
TEMPE, ARIZONA 85281

February 8, 1983

Dear Resident,

In August 1982 you participated in a survey about the proposed hazardous waste facility and asked that the results be sent to you. I am happy to send you these results and want to personally thank you for your time and cooperation.

Let me begin by explaining why the survey was conducted. First, it was to better understand the feelings and concerns of the entire community. Many people are not able to attend special meetings to voice their opinion and others do not care to attend such gatherings. Also, in a survey, everyone has an equal voice, not just those who shout the loudest. Second, it was to document what the people were like in Rainbow Valley and Mobile in 1982 in terms of health, feelings about the community, and opinions of themselves. Such information is extremely important for both practical and research reasons. If the facility is built, there is now a record of the "before picture" to compare with the "after picture." Third, the survey was designed to answer research questions about coping and community involvement.

This project has involved a number of people and organizations. The Department of Health Services was actively involved during the planning stage, and considerable staff time and clerical support was provided by the Bureau of Waste Control and the Division of Disease Control. Faculty members from the Department of Psychology at Arizona State University served as consultants, and research assistants and doctoral students in psychology conducted the many interviews. The Sierra Club of Arizona provided some needed funding on short notice, when the Department of Health Services decided not to participate in the project at the last moment.

I take full responsibility for the contents of this report and would be glad to receive comments and questions. I am presently working in South Carolina and can be reached at the following address: Medical University of South Carolina, Department of Psychiatry, 171 Ashley Avenue, Charleston, South Carolina 29425.

Cordially,

Kenneth M Bachrach

Kenneth M. Bachrach, M.A.

Mr. Bachrach's report has been reprinted in Section IV, Socioeconomics: Quality of Life Concerns. See pages IV-60 to IV-64.

Exhibit 6
Rainbow
Valley, AZ
1 Mar 83

PHONE (602) 257-9136

Be A
Do-Something
Democrat

MARICOPA COUNTY DEMOCRATS
1001 North Central • Phoenix, Arizona 85004 • Phone 254-4179
P. O. Box 1944, Phoenix, AZ. 85001
Jennie Cox CHAIRMAN

January 29, 1981

Governor Bruce Babbitt
State Capitol, Executive Wing
1700 West Washington
Phoenix, Arizona 85007

Dear Governor Babbitt:

The following resolution was passed by the Maricopa County Democratic Central Committee on January 28, 1981.

The resolution was presented by William Gillard, Chairman of Legislative District 6 and seconded by Rep. Leon Thompson, Chairman of Legislative District 23. After much discussion, the resolution passed by the following vote: 16 yes, 2 no, and 1 abstention.

We hope you will take this resolution under serious consideration.

Sincerely

Jennie P. Cox, Chairman
Maricopa County Democrats

cc: William Gillard
Rep. Leon Thompson

PHONE (602) 257-9133

**Be A
Do-Something
Democrat**

MARICOPA COUNTY DEMOCRATS
1001 North Central • Phoenix, Arizona 85004 • Phone 254-4179
P. O. Box 1944, Phoenix, AZ. 85001
Jennie Cox **CHAIRMAN**

January 29, 1981

WHEREAS the Senate Health Committee has voted out a bill selecting a site in Rainbow Valley for hazardous waste disposal; and

WHEREAS the Rainbow Valley site is in the drainage area of Waterman Wash and the Gila River and any seepage of hazardous wastes would have disastrous results: and

WHEREAS the Rainbow Valley site has the largest number of people in the immediate area of any of the sites considered by the Department of Health Services and the area is growing rapidly; and

WHEREAS the Senate committee rejected without adequate investigation other sites recommended by DHS for purely political reasons;

THEREFORE be it resolved by the Maricopa County Democratic Central Committee that it opposes the selection of Rainbow Valley as the site of hazardous waste disposal and urges Governor Babbitt to veto any bill passed by the Legislature selecting Rainbow Valley for hazardous waste disposal.

Exhibit 7
Rainbow
Valley, AZ
1 Mar 83

DO YOU LIVE IN ARIZONA? DO YOU KNOW WHAT IS GOING-ON?

HAZARDOUS WASTE

Re: PROPOSED SITE ---MOBILE

Quote taken from page S-1 Environmental Inpact Statement, "The Mobile site is located about 6 miles southwest of the community of Mobile, which is about 65 miles southwest of Phoenix".

THIS IS NOT TRUE

SEE MAP ON REVERSE SIDE

The majority of the metropolitan area of Phoenix (approximately 1½ million people) live within 40 miles of the Mobile facility. Some as close as 26 miles.

WHY-SUCH-A-BIG eRrOR FOR MOBILE??

The distance to Western Harquahala Plain site is approximately 90 miles west of Phoenix, south of I-10 (this is OK). The Ranegras Plain site is about 100 miles west of Phoenix (this is OK).

WHO WILL MOST LIKELY BENEFIT FROM THE MOBILE SITE IN THE NEAR FUTURE?

Possible answer:

PROVIDENT ENERGY COMPANY (oil refinery to be located near the Mobile School).

WHY

1. Could possibly save $1,000,000. in construction cost. Hazardous waste wouldn't have to be stored on location, but could be taken immediately to the site 6 miles down the road.

2. The cost of hauling it 6 miles instead of 120 to 150 miles could save hundreds of thousands of dollars. The exact amount of savings would depend on what capacity the facility operated at and the exact difference in miles traveled.

WHO?? OVER-RULED THE DEPT. OF HEALTH'S RECOMENDATION OF:

WESTERN HARQUAHALA SITE?

From the 'Report to the Arizona State Legislature Regarding Siting of a Statewide Hazardous Waste Disposal Facility' (Executive Summary Jan. '81).

Page I-1 continued:

ADH's selection of the Western Harquahala area was based upon several specific factors:

a) Remoteness from existing or potential habitation

b) Lack of downgradient water uses within ten miles

c) Depth to groundwater (300 feet)

d) Presence of clay soils throughout the area

e) Easy access from Interstate 10

f) Location downgradient from the Central Arizona Project canal

In order to remove doubt a thorough check should be made to make sure that no one in the legislature was operating as a consultant to Provident Energy Co. or was a consultant to anyone else that was working for Provident Energy Co. The people of Arizona have a right to know what is going on, even if there is no conflict of interest. The following article was taken from the Phoenix paper regarding Arizona financial disclosure statue.

Senate panel clears Usdane of wrongdoing in taking fee

By The Associated Press

The state Senate Ethics Committee has agreed Majority Leader Robert Usdane did not breach Senate ethics in accepting a $47,450 fee as a health consultant.

The committee convened late Tuesday to take the final step after two investigations that cleared the Scottsdale Republican of any "criminal wrongdoing."

Committee Chairman Hal Runyan, R-Litchfield Park, said a formal report to the Senate president would say that Usdane had not violated Senate ethics.

"We will wait for the attorney general's suggestions on what changes should be made in the financial disclosure law before considering any legislation," Runyan said at conclusion of the 15-minute hearing.

The hearing followed investigations by Attorney General Bob Corbin and retired Arizona Chief Justice Fred C. Struckmeyer Jr., which said Usdane, who headed the Senate health committee last year, did not violate conflict-of-interest laws by accepting the fees in 1979-80 from a group of doctors seeking advice on setting up a health-maintenance organization.

Dr. Bruce Shelton, who headed that group, later became the major contractor under the state's indigent health-care program, a 1981 law in which Usdane had a principal role.

Usdane's finanical disclosure statement, required annually of state officials, revealed neither the source nor amount of the fee. Both investigators said Usdane had met the "minimal requirements" of the law, but the attorney general suggested changes are needed.

"The financial disclosure statute is so general in its requirements and riddled with exceptions that a conflict of interest would almost never be revealed through completion of the form . . ." Corbin said.

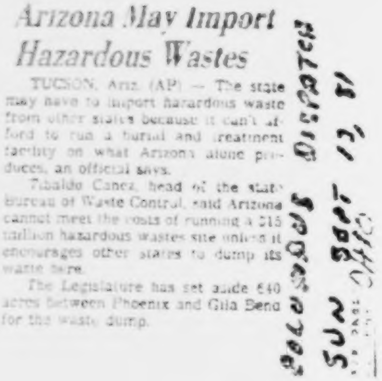
Usdane has said he intends to seek legislation to tighten financial-disclosure requirements.

Hazardous WASTE from OUT- OF-STATE

I. How LARGE A VOLUME POSSIBLE from CALIFORNIA? **(Taken from page C-5** Environmental Impact Statement)

Variables influencing the potential for import of wastes from California are even more complex. California is a major generator of hazardous wastes, and is in the process of developing a state hazardous waste control program which would restrict or discourage the landfilling of many types of regulated wastes. Also, several disposal facilities in southern California have closed or may close in the near future, leaving this major industrial area without sufficient nearby disposal capacity.

II. NEED-FOR-WASTE from OUTSIDE ARIZONA



Arizona May Import Hazardous Wastes

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The Legislature has set aside 640 acres between Phoenix and Gila Bend for the waste dump.

COLUMBUS DISPATCH
SUN SEPT 13, 81
OHIO

Valley, AZ
1 Mar 83

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

20 JAN 1983

TO ALL INTERESTED AGENCIES, PUBLIC GROUPS, AND CONCERNED CITIZENS:

Attached for your review is the Draft Environmental Impact Statement (DEIS) for the proposed Arizona Hazardous Waste Management Facility. This DEIS, prepared in accordance with the National Environmental Policy Act of 1969, addresses the proposed sale of federal land by the U. S. Bureau of Land Management (BLM) to the State of Arizona for the purpose of siting a hazardous waste facility.

At BLM's request, the Environmental Protection Agency (EPA) assumed the role of lead agency in preparing the EIS. BLM and the Arizona Department of Health Services (ADHS) haved served as cooperating agencies.

Public hearings will be held on Tuesday, March 1, 1983, to receive testimony on this DEIS. The times and places are listed below. All interested persons are invited to express their views at these hearings.

9:00 a. m.
Arizona Department of Health Services
Conference Rooms A and B, 4th floor
1740 West Adams Street
Phoenix, Arizona

7:30 p. m.
Buckeye Elementary School Cafeteria
210 South 6th Street
Buckeye, Arizona

In addition, the public is invited to meet with representatives of EPA, BLM, and ADHS to discuss the EIS in an "open house" public meeting to be held between 7:30 and 9:30 p. m. on Thursday, February 17, 1983, at the Mobile Elementary School, in Mobile, Arizona, 14 miles west of Maricopa on the Maricopa-Mobile Road.

Public comments on the DEIS may be submitted for 45 days after notice of the DEIS appears in the Federal Register. All comments, questions, and requests for additional copies of the DEIS (available in limited supply) or of the Summary should be directed to:

U. S. Environmental Protection Agency, Region 9
ATTN: Chuck Flippo (T-2-1)
215 Fremont Street
San Francisco, CA 94105

phone: (415) 974-8128

Copies of this DEIS are also available for review at these agencies and libraries:

U. S. Environmental Protection Agency
Region 9
Library-Information Center
215 Fremont Street
San Francisco, CA 94105

U. S. Environmental Protection Agency
Public Reference Unit, Library
401 M Street SW, Room 2922
Washington, DC 20460

U. S. Bureau of Land Management
Phoenix District Office
2929 West Clarendon
Phoenix, AZ 85017

Arizona Department of Health Services
Library
1740 West Adams
Phoenix, AZ 85007

Arizona Department of Health Services, Northern Regional Office
2501 North Fourth Street
Flagstaff, AZ 86001

Arizona Department of Health Services, Southern Regional Office
403 West Congress
Tucson, AZ 85701

Arizona Department of Library, Archives, and Public Records
State Capitol Building
Phoenix, AZ 85007

Central Arizona Association of Governments
1810 Main Street
Florence, AZ 85232

District IV Council of Governments
1020 Fourth Avenue
Yuma, AZ 85364

Maricopa Association of Governments
111 South Third Avenue
Phoenix, AZ 85004

Northern Arizona Council of Governments
119 East Aspen Street
Flagstaff, AZ 86001

Pima Association of Governments
405 Trans-America Building
Tucson, AZ 85701

Southeastern Arizona Governments Organization
118 Arizona Street
Bisbee, AZ 85603

Clifton City-Greenlee County Library
Riverside Drive
Clifton, AZ 85533

Cochise County Library
6 Main Street
Bisbee, AZ 85603

Flagstaff City-Coconino County Library
11 West Cherry
Flagstaff, AZ 86001

Maricopa County Library
3375 West Durango
Phoenix, AZ 85009

Miami Memorial-Gila County Library
1052 Adonis Avenue
Miami, AZ 85539

Mohave County Library
219 North Fourth Street
Kingman, AZ 86401

Nogales City-Santa Cruz County Library
548 Grand Avenue
Nogales, AZ 85621

Pinal County Free Library
1301 Pinal
Florence, AZ 85232

Prescott Public-Yavapai County Library
215 East Goodwin Street
Prescott, AZ 86301

Roxanne Whipple Memorial-Navajo County Library
420 West Gilmore
Winslow, AZ 86047

Safford City-Graham County Library
808 Eighth Avenue
Safford, AZ 85546

St. Johns-Apache County Library
75 West Cleveland
St. Johns, AZ 85936

Tucson Public-Pima County Library System
200 South Sixth Avenue
Tucson, AZ 85729

Yuma City-County Library
350 Third Avenue
Yuma, AZ 85364

Arizona State University
Documents Service
Hayden Library
Tempe, AZ 85281

Northern Arizona University
Library
Flagstaff, AZ 86001

Health Sciences Center Library
University of Arizona
Tucson, AZ 85724

Exhibit 9

② The State Az (legislature) made site selection because inadequate dumping facilities in Az. Did state study but based on secondary data) other better data was available ie BLM thru planning process. (BLM, Forest Service & Fed. agencies required by FL[illegible]A - 1976 to put together federal management for land.)

From this inadequate study 3 final sites were selected. Of the 3 the mobile site was the least preferred by the Az Dept of Health Services. Based on Political pressure the legislature designated the mobile site Feb. 1981.
P3-1 of DEIS Draft Environ. Impact statement -(
When the State contacted the BLM about this site they said they needed project discription of hazard waste facility.

(Political pressure forced EIS to be done on land transfer not on the hazard waste facility.)

(Environmental Protection Agency
EPA was made leading agent over BLM
(who should have been the lead agent)
because it's their land.
~~but~~ EPA should have been cooperating agent. BLM handled both land transfer

Exhibit 9
Rainbow Valley AZ
1 Mar 83

& hazard waste facility addressed at same time so public would be aware of what was happening. Subsequently, EPA was made lead agent.

NEPA Section 1501.2d ~~[illegible]~~
Council of Environmental Quality CEQ interpretation that the NEPA process should be coordinated to ensure an early & comprehensive analysis of the effects of the proposal (land transfer is proposal) & any related actions (the hazard waste fac.) BLM informed Az Dept Health & Ser.)

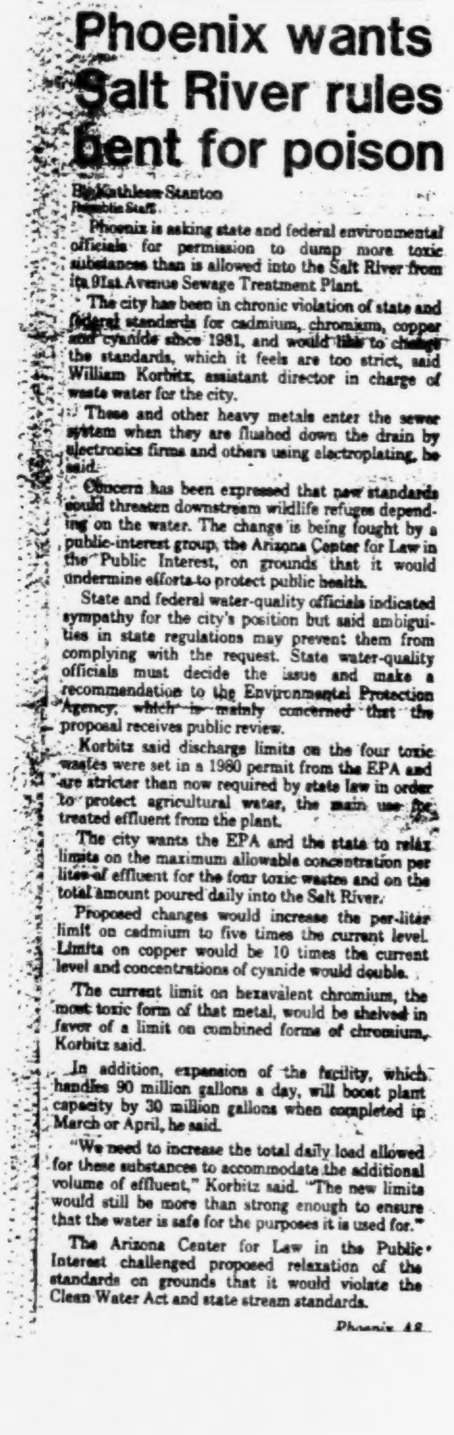
NEPA clearly indicated that not only the land trans. but the Haz. waste fac should be addressed in EIS. However, since a (complete!) project description for the haz w. fac is not yet known.

~~([illegible] developed [illegible] it)~~

Question is how can adequate EIS be done.

Exhibit 10
Rainbow
Valley, AZ
1 Mar 83

Phoenix Gazette
14 Feb 83



[illegible] withrdaw its wards from the home with

Phoenix wants Salt River rules bent for poison

By Kathleen Stanton
Republic Staff

Phoenix is asking state and federal environmental officials for permission to dump more toxic substances than is allowed into the Salt River from its 91st Avenue Sewage Treatment Plant.

The city has been in chronic violation of state and federal standards for cadmium, chromium, copper and cyanide since 1981, and would like to change the standards, which it feels are too strict, said William Korbitz, assistant director in charge of waste water for the city.

These and other heavy metals enter the sewer system when they are flushed down the drain by electronics firms and others using electroplating, he said.

Concern has been expressed that new standards would threaten downstream wildlife refuges depending on the water. The change is being fought by a public-interest group, the Arizona Center for Law in the Public Interest, on grounds that it would undermine efforts to protect public health.

State and federal water-quality officials indicated sympathy for the city's position but said ambiguities in state regulations may prevent them from complying with the request. State water-quality officials must decide the issue and make a recommendation to the Environmental Protection Agency, which is mainly concerned that the proposal receives public review.

Korbitz said discharge limits on the four toxic wastes were set in a 1980 permit from the EPA and are stricter than now required by state law in order to protect agricultural water, the main use for treated effluent from the plant.

The city wants the EPA and the state to relax limits on the maximum allowable concentration per liter of effluent for the four toxic wastes and on the total amount poured daily into the Salt River.

Proposed changes would increase the per-liter limit on cadmium to five times the current level. Limits on copper would be 10 times the current level and concentrations of cyanide would double.

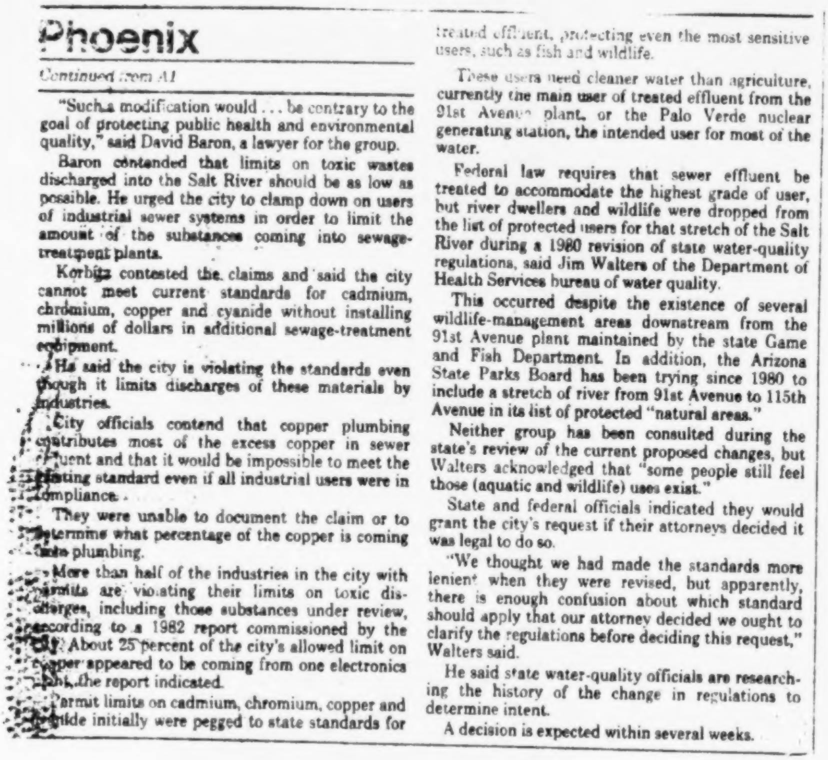
The current limit on hexavalent chromium, the most toxic form of that metal, would be shelved in favor of a limit on combined forms of chromium, Korbitz said.

In addition, expansion of the facility, which handles 90 million gallons a day, will boost plant capacity by 30 million gallons when completed in March or April, he said.

"We need to increase the total daily load allowed for these substances to accommodate the additional volume of effluent," Korbitz said. "The new limits would still be more than strong enough to ensure that the water is safe for the purposes it is used for."

The Arizona Center for Law in the Public Interest challenged proposed relaxation of the standards on grounds that it would violate the Clean Water Act and state stream standards.

Phoenix 48



Phoenix

Continued from A1

"Such a modification would . . . be contrary to the goal of protecting public health and environmental quality," said David Baron, a lawyer for the group.

Baron contended that limits on toxic wastes discharged into the Salt River should be as low as possible. He urged the city to clamp down on users of industrial sewer systems in order to limit the amount of the substances coming into sewage-treatment plants.

Korbitz contested the claims and said the city cannot meet current standards for cadmium, chromium, copper and cyanide without installing millions of dollars in additional sewage-treatment equipment.

He said the city is violating the standards even though it limits discharges of these materials by industries.

City officials contend that copper plumbing contributes most of the excess copper in sewer effluent and that it would be impossible to meet the existing standard even if all industrial users were in compliance.

They were unable to document the claim or to determine what percentage of the copper is coming from plumbing.

More than half of the industries in the city with permits are violating their limits on toxic discharges, including those substances under review, according to a 1982 report commissioned by the city. About 25 percent of the city's allowed limit on copper appeared to be coming from one electronics plant, the report indicated.

Permit limits on cadmium, chromium, copper and cyanide initially were pegged to state standards for treated effluent, protecting even the most sensitive users, such as fish and wildlife.

These users need cleaner water than agriculture, currently the main user of treated effluent from the 91st Avenue plant, or the Palo Verde nuclear generating station, the intended user for most of the water.

Federal law requires that sewer effluent be treated to accommodate the highest grade of user, but river dwellers and wildlife were dropped from the list of protected users for that stretch of the Salt River during a 1980 revision of state water-quality regulations, said Jim Walters of the Department of Health Services bureau of water quality.

This occurred despite the existence of several wildlife-management areas downstream from the 91st Avenue plant maintained by the state Game and Fish Department. In addition, the Arizona State Parks Board has been trying since 1980 to include a stretch of river from 91st Avenue to 115th Avenue in its list of protected "natural areas."

Neither group has been consulted during the state's review of the current proposed changes, but Walters acknowledged that "some people still feel those (aquatic and wildlife) uses exist."

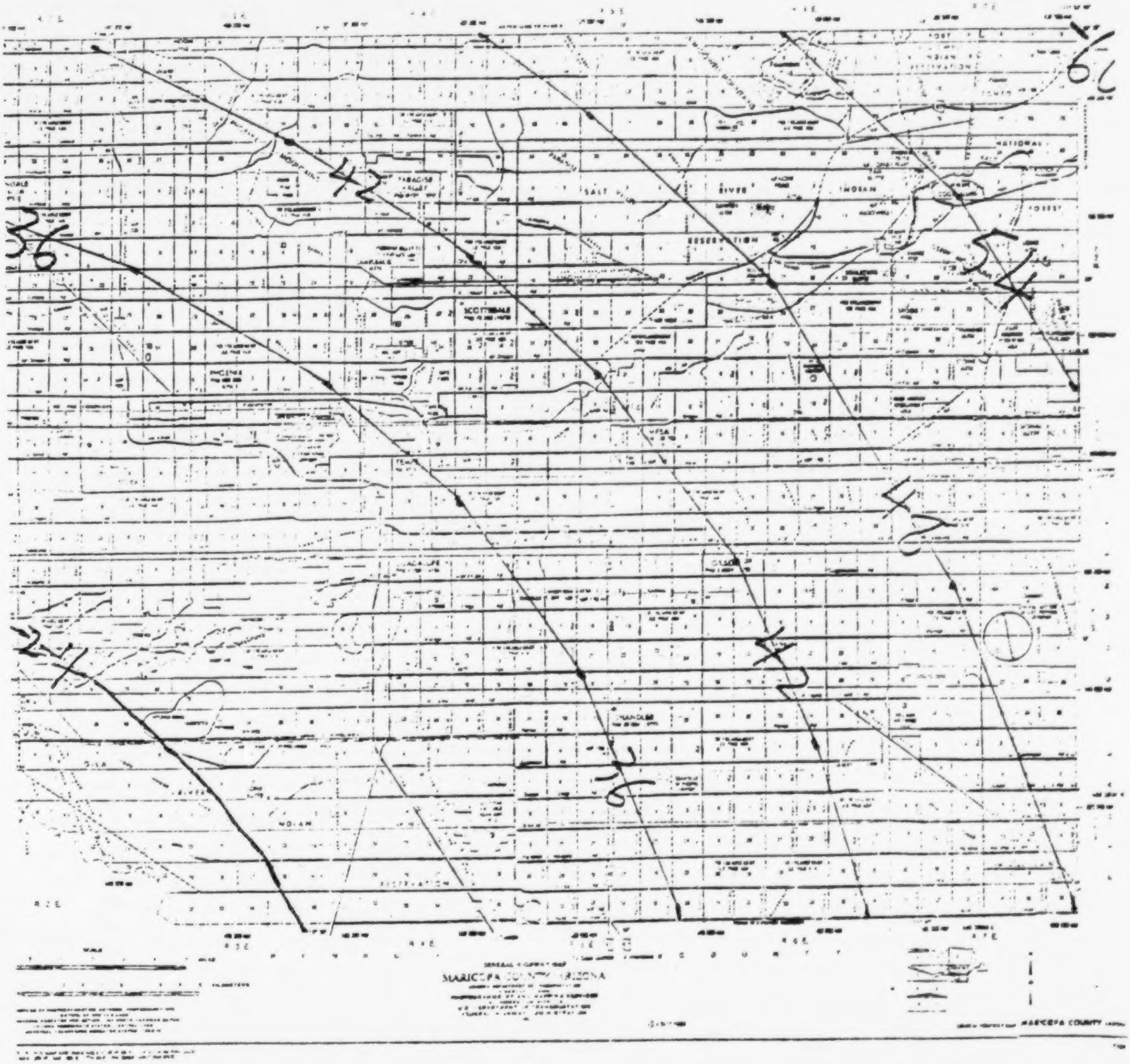
State and federal officials indicated they would grant the city's request if their attorneys decided it was legal to do so.

"We thought we had made the standards more lenient when they were revised, but apparently, there is enough confusion about which standard should apply that our attorney decided we ought to clarify the regulations before deciding this request," Walters said.

He said state water-quality officials are researching the history of the change in regulations to determine intent.

A decision is expected within several weeks.

Exhibit 11
Rainbow
Valley, AZ
1 Mar 83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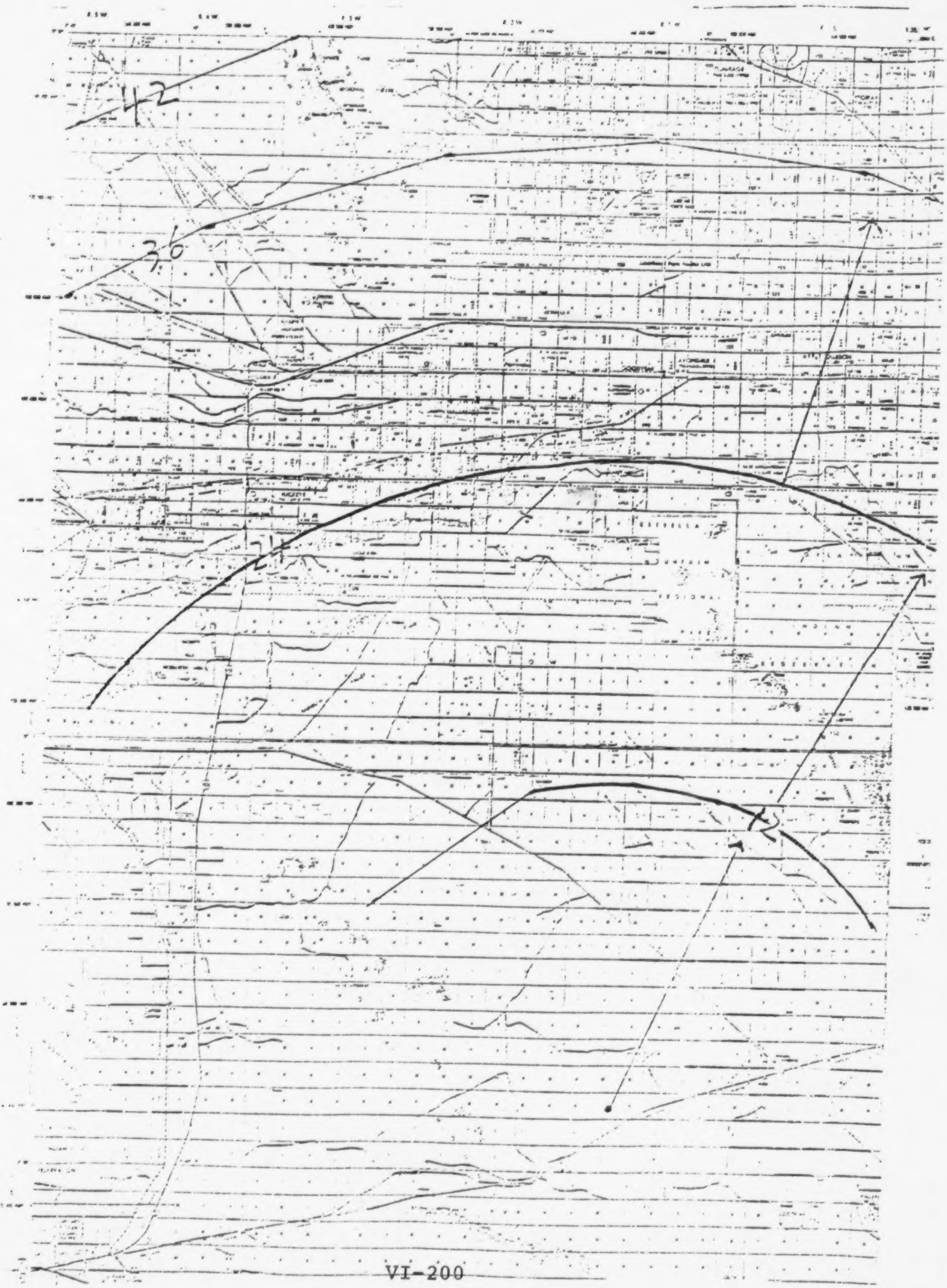
SALT RIVER INDIAN RESERVATION
SCOTTSDALE
PHOENIX
MESA
TEMPE
CHANDLER
GILA RIVER INDIAN RESERVATION
GENERAL HIGHWAY MAP
MARICOPA COUNTY, ARIZONA
MARICOPA COUNTY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12

HAZARDOUS WASTE vs. HAZARDOUS MATERIAL

Hazardous MATERIAL is being hauled through the cities and across bridges(carrying our drinking water) thousands of times each day. This MATERIAL in many cases is more dangerous than HAZARDOUS WASTE. What are we doing to protect the citizens of Arizona from this hazard? Hazardous waste will not amount to 1% of the risk involved.

COST TO CONSTRUCT ROAD TO MOBILE SITE (RAINBOW VALLEY) compared to----- WESTERN HARQUAHALA or RANEGROS PLAINS

Twenty miles of road will have to be paved in order to bring Hazardous Waste to the Mobile Site (Rainbow Valley). This road will be used by many people, and will cost millions of dollars. This cost can run to $20,000,000. The other sites will need only 3 to 6 miles of roads and could be a private road (possible). The cost to build this road is only a fraction of the cost of Building the MOBILE SITE ROAD.

WHO WILL PAY THE COST OF THE ROADS?-----

We have been lead to believe that the Company operating the Hazardous Waste Site will pay for the roads construction in order to bring waste to the site. However, the cost of building a road is so high that other alternatives are being considered. The most discussed alternative is to have the Refinery, Hazardous Waste Site, Pinal county and Maricopa county share the cost. If this plan were adopted then the citizens of Arizona would in fact be subsidizing 50% of the construction cost of the road. At the other sites the road construction would be nominal as compared to the Mobile Site and the Site could afford to pay 100% of the road cost.

THE PURPOSE OF THE HAZARDOUS WASTE SITE WAS TO SAVE THE COMPANIES HAVING WASTE MONEY BY HAVING A FACILITY IN ARIZONA

There is a big question whether this would occur at the Mobile Site. The Dept. of Health has been having difficulty getting bids. The Co.'s bidding know that if their charges are too high that the people having waste will either haul the waste out of state or find a way of handling it on location. The Mobile Site is costly to build because of the high cost of building roads into it. The cost of the Harquahala or Ranegros Plains Site would be substantially less and would be near the big California market. If the Site could get part of the California market they would have a better chance at making a profit, and at the same time have a cheaper rate for the Arizona user.

Hazardous WASTE from OUT- OF-STATE

I. How LARGE A VOLUME POSSIBLE from CALIFORNIA? (Taken from page C-5 Environmental Impact Statement)

Variables influencing the potential for import of wastes from California are even more complex. California is a major generator of hazardous wastes, and is in the process of developing a state hazardous waste control program which would restrict or discourage the landfilling of many types of regulated wastes. Also, several disposal facilities in southern California have closed or may close in the near future, leaving this major industrial area without sufficient nearby disposal capacity.

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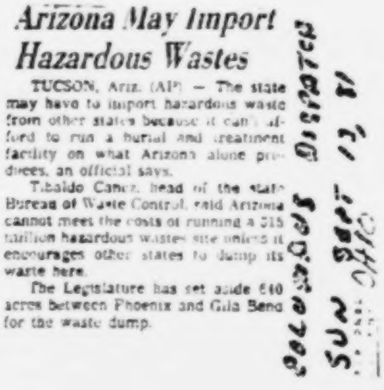

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Colorado Spgs Dispatch
Sun Sept 13, 81

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b) Lack of downgradient water uses within ten miles

c) Depth to groundwater (300 feet)

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e) Easy access from Interstate 10

f) Location downgradient from the Central Arizona Project canal

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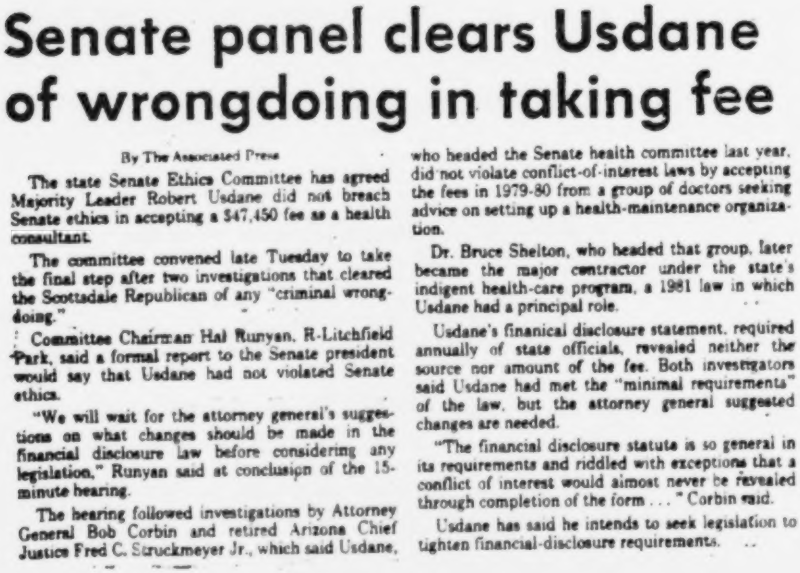

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The state Senate Ethics Committee has agreed Majority Leader Robert Usdane did not breach Senate ethics in accepting a $47,450 fee as a health consultant.

The committee convened late Tuesday to take the final step after two investigations that cleared the Scottsdale Republican of any "criminal wrongdoing."

Committee Chairman Hal Runyan, R-Litchfield Park, said a formal report to the Senate president would say that Usdane had not violated Senate ethics.

"We will wait for the attorney general's suggestions on what changes should be made in the financial disclosure law before considering any legislation," Runyan said at conclusion of the 15-minute hearing.

The hearing followed investigations by Attorney General Bob Corbin and retired Arizona Chief Justice Fred C. Struckmeyer Jr., which said Usdane, who headed the Senate health committee last year, did not violate conflict-of-interest laws by accepting the fees in 1979-80 from a group of doctors seeking advice on setting up a health-maintenance organization.

Dr. Bruce Shelton, who headed that group, later became the major contractor under the state's indigent health-care program, a 1981 law in which Usdane had a principal role.

Usdane's finanical disclosure statement, required annually of state officials, revealed neither the source nor amount of the fee. Both investigators said Usdane had met the "minimal requirements" of the law, but the attorney general suggested changes are needed.

"The financial disclosure statute is so general in its requirements and riddled with exceptions that a conflict of interest would almost never be revealed through completion of the form . . ." Corbin said.

Usdane has said he intends to seek legislation to tighten financial-disclosure requirements.

DO YOU LIVE IN ARIZONA? DO YOU KNOW WHAT IS GOING-ON?

HAZARDOUS WASTE

Re: PROPOSED SITE ---MOBILE

Quote taken from page S-1 Environmental Impact Statement, "The Mobile site is located about 6 miles southwest of the community of Mobile, which is about 65 miles southwest of Phoenix".

THIS IS NOT TRUE

SEE MAP ON REVERSE SIDE

The majority of the metropolitan area of Phoenix (approximately 1½ million people) live within 40 miles of the Mobile facility. Some as close as 26 miles.

WHY-SUCH-A-BIG eRrOR FOR MOBILE??

The distance to Western Harquahala Plain site is approximately 90 miles west of Phoenix, south of I-10 (this is OK). The Ranegras Plain site is about 100 miles west of Phoenix (this is OK).

WHO WILL MOST LIKELY BENEFIT FROM THE MOBILE SITE IN THE NEAR FUTURE?

Possible answer:

PROVIDENT ENERGY COMPANY (oil refinery to be located near the Mobile School).

WHY

1. Could possibly save $1,000,000. in construction cost. Hazardous waste wouldn't have to be stored on location, but could be taken immediately to the site 6 miles down the road.

2. The cost of hauling it 6 miles instead of 120 to 150 miles could save hundreds of thousands of dollars. The exact amount of savings would depend on what capacity the facility operated at and the exact difference in miles traveled.

WHO?? OVER-RULED THE DEPT. OF HEALTH'S RECOMENDATION OF:

WESTERN HARQUAHALA SITE?

From the 'Report to the Arizona State Legislature Regarding Siting of a Statewide Hazardous Waste Disposal Facility' (Executive Summary Jan. '81).

SECTION VII

LIST OF PREPARERS

In addition to the persons listed in Section 5 of the Draft EIS, the following individuals participated in the preparation of this Final EIS.

ARIZONA DEPARTMENT OF HEALTH SERVICES

Norm Weiss, Planning Manager

Post-Graduate Studies - Arizona State University, Tempe
Planning and Public Administration

M.A. - Arizona State University, Tempe
Geography and Land Use Studies

B.S. - Arizona State University, Tempe
Biology

Mr. Weiss is responsible for managing program development and remedial action planning programs for the Bureau of Waste Control. He assisted in the preparation of portions of the EIS dealing with the facility development process.

William D. Wiley, Hydrologist

M.S. - University of Arizona, Tucson
Hydrology

B.S. - Arizona State University
Physical Geography

Mr. Wiley, a hydrologist in the Bureau of Waste Control, is working on development of the hazardous waste facility. He helped prepare portions of the EIS dealing with surface water.

SECTION VIII

COORDINATION LIST

This EIS has been sent to the following agencies and organizations for review.

FEDERAL AGENCIES

- Advisory Council on Historic Preservation
- Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Defense
  - Corps of Engineers
  - U. S. Air Force
- Department of Health and Human Services
  - Indian Health Service
- Department of the Interior
  - Bureau of Indian Affairs
  - Bureau of Land Management
  - Bureau of Reclamation
  - Geological Survey
  - National Park Service
- Department of Transportation
  - Federal Highways Office

STATE AGENCIES

- Arizona Agriculture and Horticulture Commission
- Arizona Department of Health Services
  - Bureau of Air Quality
  - Bureau of Water Quality
  - Bureau of Waste Control
  - Local Health Services
- Arizona Department of Public Safety
- Arizona Department of Transportation
- Arizona Department of Water Resources
- Arizona Division of Emergency Services
- Arizona Game and Fish Department
- Arizona Natural Heritage Program
- Arizona Office of Economic Planning and Development
- Arizona Outdoor Recreation Coordination Commission
- Arizona State Clearinghouse
- Arizona State Historic Preservation Officer
- Arizona State Land Department

Attorney General's Office
Governor's Commission on the Arizona Environment

LOCAL AGENCIES

Central Arizona Association of Governments
District IV Council of Governments
Maricopa Association of Governments
Maricopa County Board of Supervisors
Maricopa County Civil Defense
Maricopa County Development Agency
Maricopa County Health Department
Maricopa County Highway Department
Maricopa County Landfill Department
Maricopa County Manager
Maricopa County Planning and Zoning Department
Northern Arizona Council of Governments
Phoenix District Sanitation Department
Pinal County Administrator
Pinal County Board of Supervisors
Pinal County Highway Department
Pinal County Planning and Zoning Department
Southeastern Arizona Council of Governments
Tucson City Attorney's Office
Yuma County Board of Supervisors
Yuma County Health Department
Yuma County Highway Department
Yuma County Planning and Zoning Department

INDIAN TRIBES

Ak Chin Tribal Council
Colorado River Indian Tribe
Gila River Indian Community
Inter-tribal Council
Papago Tribal Council

OTHER ORGANIZATIONS

Arizona Association of Industries
Arizona Cattle Growers Association
Arizona Cotton Growers Association
Arizona Environmental Alliance
Arizona Farm Bureau
Arizona Mining Association
Arizona Parks and Recreation Association
Arizona Wildlife Federation
Arizona 4-Wheel Drive Association
Audubon Society

Environmental Council of Arizona
~~Izaac Walton League~~
League of Women Voters
Maricopa County Farm Bureau
Phoenix Metropolitan Chamber of Commerce
Salt River Project
Sierra Club
Southern Arizona Environmental Council
Tucson Environmental Council
Tucson Metropolitan Chamber of Commerce
University of Arizona, Council for Environmental Studies
Wildlife Society
Yuma County Farm Bureau

SECTION IX

REFERENCES

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3. Martin, J. (Vice-President, Pyrotechnic Systems, Inc.) Personal Communication. June 1983.

4. U. S. Environmental Protection Agency. *Engineering Handbook for Hazardous Waste Incinerators*. Publication No. SW-889. 1981.

5. Governor's Office of Appropriate Technology, Toxic Waste Asessment Group. *Alternatives to the Land Disposal of Hazardous Wastes: An Assessment for California*. 1981.

6. Drye, R. (ENSCO, Inc.) Personal Communication. May 1983.

7. Johnson, J. (BKK, Inc.) Personal Communication. May 1983.

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12. Van Haveren, B. P. *Hydrologic Risk and Return Period Selection for Water Related Projects*. U. S. Department of the Interior, Bureau of Land Management Technical Note. September 1970.

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14. U. S. EPA Region 6. Incineration of PCBs, Summary of Approval Actions, Energy Systems Company (ENSCO), El Dorado, Arkansas (permit document). February 1981.

15. U. S. EPA Region 6. Incineration of PCBs, Summary of Approval Actions, Rollins Environmental Services, Deer Park, Texas (permit document). February 1981.

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20. Arizona Department of Transportation. [Data base] 1982.

21. Arizona Department of Transportation. Arizona Hazardous Materials Survey. May 1981.

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24. U. S. Department of Health and Human Services and U. S. Department of Labor. NIOSH/OSHA Pocket Guide to Chemical Hazards. DHEW (NIOSH) Publication No. 78-210. 1978.

25. Arizona Lung Association. Coccidioicomycosis: Cocci: Valley Fever. [no date]

26. Jeffrey, D. "'Valley Fever' Spores are Widespread Threat." BLM Newsbeat (U. S. Department of the Interior, Bureau of Land Management, California State Office). May 1979.

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Appendices

APPENDIX A

VOLATILE ORGANIC COMPOUNDS AND TOXIC EMISSIONS

The distinction made in this EIS between volatile organic compounds (VOC) and potentially toxic emissions is somewhat artificial because many VOCs may also be toxic compounds. According to theoretical estimates made, volatile emissions at the proposed facility should be relatively low, since the State's plans call for liquid organic compounds to be mixed with solids and placed in barrels. The Draft EIS notes, however, that experience at other landfills suggests the possibility of toxic emissions from the landfill.

In order to address this issue more fully in the Final EIS, EPA staff attempted to obtain empirical data characterizing emission rates and/or ambient levels of organic compounds for landfills comparable to that suggested in the representative design.* This research yielded few data concerning air quality or emissions which could reasonably be applied to the proposed Arizona facility.

A report recently released by the California Department of Health Services indicates that elevated ambient levels of organic compounds can occur near landfills (1).† The landfill examined in this study, however, differs from the representative design for the Arizona facility in several important respects.

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* Several potential sources of information were consulted, including:

- EPA staff in in Region 9, the Office of Solid Waste, the Office of Toxic Substances, and the Industrial Environmental Research Laboratory in Cincinnati, Ohio;
- An EPA contractor performing ongoing projects related to air emissions from treatment, storage, and disposal facilities;
- Papers from Air Pollution Control Association conferences related to toxic air contaminants (2,3);
- EPA Region 9 reports relating to air and soil emissions from an abandoned hazardous waste site in California (4,5);
- California Air Resources Board (ARB) reports relating to air quality in the vicinity of hazardous waste facilities (6,7);
- ARB staff.

† Compounds found include benzene, tetrachloroethylene, and trichloroethylene.

First, methods of disposal at the California landfill lend themselves well to volatilization of organics, in that hazardous liquid waste is simply mixed with solid landfill waste and covered over with soil. Lower emissions could be achieved at a facility which was operated with more attention to preventing volatile emissions.

Second, the monitoring at the California landfill took place at the perimeter of the landfill. Monitoring further downwind (for example, at a distance comparable to that separating the community of Mobile from the Mobile site) would probably show dispersion of the emitted compounds.*

Third, no solvent recovery system is used at the California facility, whereas the representative design for the Arizona facility calls for solvent recovery at the landfill.

These projected differences, if actually realized at the proposed facility, would result in much lower emissions and ambient levels of volatile organic compounds at the Arizona facility compared to the facility monitored in California.

The DEIS notes that the mixing of acid and alkali wastes could generate heat and change the pH of solutions, which could cause reactions or the evolution of organic or toxic compounds into the air (DEIS p. 4-13). The Draft EIS states that, while such reactions should prove negligible or non-existent under normal operating conditions, the possibility of such emissions should be recognized. The Draft EIS fails to clarify that if the operator complies with the requirements in EPA's regulations concerning ignitable, reactive, and incompatible wastes (40 CFR 264.17), there should be no generation of fumes from reactions.

REFERENCES

1. California Department of Health Services, California Air Resources Board, and South Coast Air Quality Management District. Ambient Air Monitoring and Health Risk Assessment for Suspect Human Carcinogens around the BKK Landfill in West Covina. 1983.

---

* It should be noted that monitoring to determine the emission rate of a compound (amount of the compound which is being emitted by the facility) is generally done as close to the source as possible. The ambient concentration of the compound (amount in the air in a given area) would be monitored at varying distances from the source and would reflect dispersion of the compound.

2. Lynch, E. R., R. K. Goldman, and W. V. Blasland, Jr. *Development and Implementation of an Air Monitoring Program at an Inactive Hazardous Waste Disposal Site -- A Case Study*. Paper presented at the 75th Meeting of the Air Pollution Control Association, New Orleans, LA. 1982.

3. Angiola, A. J. and J. M. Soden. *Predicting and Controlling Downwind Concentrations of PCB from Surface Impoundments*. Paper presented at the 75th Meeting of the Air Pollution Control Association, New Orleans, LA. 1982.

4. The Radian Corporation. *The McColl Site Investigation*. 1982.

5. TRC Environmental Consultants, Inc. *Final Report on the Air Quality and Odor Portions of the Environmental Investigation Program of the McColl Site*. 1982.

6. California Air Resources Board. *An Assessment of the Volatile and Toxic Organic Emissions from Hazardous Waste Disposal in California*. 1982.

7. California Air Resources Board. *Suggested Control Measure to Reduce Organic Compound Emissions Associated with Volatile Organic Waste Disposal*. 1982.

APPENDIX B

EMISSIONS CALCULATIONS FOR A HAZARDOUS WASTE SPILL

The emissions in the spill scenario presented in Section IV are calculated as follows:

(A) Puddle area calculation

$$\# \text{ gallons of toxic compound} = (0.90 \times 5{,}000) = 4{,}500 \text{ gallons}$$

$$\text{puddle volume} = (4{,}500 \text{ gal})\left(\frac{2.31 \times 10^{2} \text{ in}^{3}}{\text{gal}}\right) = 1.04 \times 10^{6} \text{ in}^{3}$$

Assuming a one-inch depth, then:

$$\text{puddle area} = \left(\frac{1.04 \times 10^{6} \text{ in}^{3}}{1 \text{ in}}\right) = 1.04 \times 10^{6} \text{ in}^{2}$$

(B) Emission rate calculation (1)

$$Q = 0.08\, V^{3/4} A(1 + (4.3 \times 10^{-3})(T_p^{2}))Z$$

where,

Q = emission rate (kg/hr)
V = wind speed (assumed to be 2.5 meters per second)*
A = spill area (m^2) (from (A) above)
T_p = toxic chemical pool temperature (assumed to be 26.7°C, or 80° F)
Z = dimensionless factor determined by chemical (for benzene, Z = 22.67; for methylene chloride, Z = 76.7)

$\therefore$ Q (benzene) = 9.86×10^{3} kg/hr
Q (methylene chloride) = 3.33×10^{4} kg/hr

Given these emission rates, ambient levels of benzene and methylene chloride at given distances from the spill can be calculated (2):

$$X = \frac{Q}{\pi \Sigma Y \Sigma z U}$$

---

* The reason for assuming this wind speed is discussed in Section IV, Air Quality.

where

X = ambient concentration (g/m^3)
Q = emission rate, from (B) above
$\Sigma y \Sigma z$ = horizontal and vertical dispersion coefficients
U = wind speed (assumed to be 2.5 m/s)

These calculations assume worst case meteorological conditions ("F" stability) and a wind speed of 2.5 meters per second (m/s). Ambient levels (X) in g/m^3 at given distances from the spill are given in Table IV-5.

REFERENCES

1. Kahler, J., R. Curry, and R. Kandler. *Calculating Toxic Corridors*. Headquarters Air Weather Service (MAC), Scott AFB, IL. AWS/TR-80/003. 1980.

2. U. S. Environmental Protection Agency. *Workbook of Atmospheric Dispersion Models*. Publication No. AP-26. 1974.

APPENDIX C

MILEAGE AND FUEL CONSUMPTION ESTIMATES

Mileage and fuel consumption estimates for waste shipments generated within Arizona are based on the number of shipments likely to be generated in Phoenix and Tucson. About 90% of the hazardous waste generated within the State is generated in these two metropolitan areas. Approximately 2,000 shipments per year are expected to be generated in the Phoenix area, while 320 shipments per year are expected from Tucson (see DEIS Appendix N). Because of the assumptions made in making these calculations, fuel consumption figures should be viewed as rough indicators, rather than actual estimates, of fuel consumption.

Table C-1 shows one-way mileage figures for the Mobile site and the Western Harquahala Plain/Ranegras Plain sites, using the longest access routes identified in the Draft EIS (see DEIS pp. 4-19, 4-20, and 4-23). Also shown are distances to the nearest existing out-of-state waste facility: the BKK facility in West Covina, California (just east of Los Angeles). Table C-2 shows the potential fuel consumption, based on an estimated mileage figure for trucks of five miles per gallon.

The approximate amounts of fuel that could be saved by transporting hazardous wastes generated within Arizona to an in-state facility, rather than the nearest existing out-of-state facility, are shown below.

Mobile

Gallons consumed to West Covina:	349,000
Gallons consumed to Mobile:	66,000
Gallons saved:	283,000

Western Harquahala Plain/Ranegras Plain

Gallons consumed to West Covina:	349,000
Gallons consumed to WHP/RP:	119,000
Gallons saved:	230,000

As the figures show, fuel savings would likely be greater at the Mobile site than at the Western Harquahala Plain and Ranegras Plain sites by about 53,000 gallons per year.

Table C-1. Travel miles of hazardous waste shipments to proposed Arizona sites and nearest out-of-state site

Destination	From Phoenix		From Tucson		Total Travel Miles†
	Distance	Travel Miles*	Distance	Travel Miles*	
Mobile	65	130,000	107	34,240	164,240
WHP/RP**	110	220,000	242	77,440	297,440
West Covina	360	720,000	473	151,360	871,360

* Travel miles are calculated by multiplying the distance by the estimated number of hazardous waste shipments per year (2,000 from Phoenix, 320 from Tucson).

† Total Travel Miles are the combined travel miles for both cities.

**WHP/RP = Western Harquahala Plain/Ranegras Plain sites.

Table C-2. Estimated fuel consumption of in-state hazardous waste shipments

Destination	Total Round-Trip Travel Miles*	Total Fuel Consumption (Gallons)†
Mobile	328,480	65,969
WHP/RP**	594,800	118,960
West Covina	1,742,720	348,544

* Travel Miles from Table C-1 have been doubled to represent the round-trip mileages.

† This figure equals total round-trip miles divided by an estimated average truck mileage rate of five miles per gallon.

**WHP/RP = Western Harquahala Plain/Ranegras Plain sites.

If a PCB incinerator were located in Arizona, PCB shipments from western states going to the existing incinerator in El Dorado, Arkansas, would likely be routed instead to the Arizona facility. Estimates of the number of shipments that would be expected annually at the facility from various western cities are shown in Table C-3, along with travel miles to the proposed and alternative sites as well as the El Dorado facility. Table C-4 shows estimated fuel consumption.

Approximate fuel savings achieved by shipping PCB wastes to an Arizona facility rather than the Arkansas facility are shown below.

Mobile

Gallons consumed to El Dorado: 255,000
Gallons consumed to Mobile: 117,000
Gallons saved: 138,000

Western Harquahala Plain/Ranegras Plain

Gallons consumed to El Dorado: 255,000
Gallons consumed to WHP/RP: 100,000
Gallons saved: 155,000

Potential fuel savings for PCB shipments would be greater at the Western Harquahala Plain and Ranegras Plain sites than at the Mobile site, since the former sites are closer to California on the route the majority of shipments would be expected to travel. The difference would amount to approximately 17,000 gallons.

As noted above, fuel savings for shipments of hazardous waste generated within Arizona would be greater if the proposed facility were located at the Mobile site rather than at the Western Harquahala Plain or the Ranegras Plain site. The reverse would be true for PCB shipments. Considering total fuel consumption from both hazardous waste and PCB shipments, use of the Mobile site would result in an overall fuel savings of about 37,000 gallons over the amount saved by using either of the other two sites.

Table C-3. Travel miles of PCB shipments to proposed Arizona sites and existing PCB incinerator (El Dorado, Arkansas)

Point of Origin	Est. Number Trips†	Destination*					
		Mobile		WHP/RP		El Dorado	
		Dis	Trv Mi	Dis	Trv Mi	Dis	Trv Mi
Boise, ID	2	1035	2070	1070	2140	1833	3666
Boulder, CO	5	878	4390	913	4565	1017	5085
Denver, CO	48	857	41136	892	42816	994	47712
Klamath Falls, OR	4	1058	4232	893	3572	2164	8656
Los Angeles, CA	67	458	30686	293	19631	1661	111287
Phoenix, AZ	13	65	845	100	1300	1268	16484
Portland, OR	45	1333	59985	1168	52560	2265	101925
Sacramento, CA	5	834	4170	669	3345	1977	9885
Salt Lake City, UT	21	716	15036	751	15771	1471	30891
San Francisco-Oakland, CA	148**	847	125356	682	100936	1990	294520
Seattle, WA	3	1505	4515	1340	4020	2337	7011
TOTAL	361		292421		250656		637122

* Distances (Dis) are highway mileages from the Standard Highway Mileage Guide (1). Travel Miles (Trv Mi) are the Estimated Number of Trips multiplied by Distance. WHP/RP stands for Western Harquahala Plain/Ranegras Plain sites.

† Estimated number of trips (annually) is based on marketing estimates from ENSCO, Inc. (2).

**The high number of estimated shipments from the San Francisco Bay Area is primarily due to the Pacific Gas and Electric Company's program of replacing its capacitors which contain PCB.

Table C-4. Estimated fuel consumption of PCB waste shipments

Destination	Total Round-Trip Travel Miles*	Total Fuel Consumption (Gallons)†
Mobile	584,842	116,968
WHP/RP**	501,312	100,262
El Dorado	1,274,244	254,849

* Travel miles from Table C-3 have been doubled to represent the total round trip mileages.

† This figure equals total round trip miles divided by an estimated average truck mileage rate of five miles per gallon.

**WHP/RP = Western Harquahala Plain/Ranegras Plain sites.

REFERENCES

1. Rand McNally and Co. Standard Highway Mileage Guide. 1969.

2. Drye, R. (Ensco, Inc.) Personal Communication. May 1983.

APPENDIX D

POPULATION RISK FACTORS FOR PCB TRANSPORTATION

Tables D-1 and D-3 show the estimated population risk factors presented by the shipment of PCB waste on access routes to the proposed sites, using estimated numbers of PCB shipments from Table C-3 (Appendix C). The methodology used to arrive at these figures is described in DEIS Appendix N. In Tables D-2 and D-4, the population risk factors attributable to the PCB shipments are added to the population risk factors presented in the Draft EIS for hazardous waste shipments to show the total population risk factor along these routes. The percent increase in the population risk factors due to the PCB shipments is also shown.

Table D-1. Population risk factor for PCB transportation to the Western Harquahala Plain and Ranegras Plain sites*

Exposure Miles	Est. No. Trips	Travel Miles†	Accident Rate§	Accident Proba-bility**	Population of Impact Area††	PCB Population Risk Factor§§
105	89	9345	0.0008	0.007	103,415	773

* The route from Phoenix to these sites follows Buckeye Road from Phoenix to Buckeye, then follows Interstate 10 to the sites (See DEIS, p. 4-23).

† Travel miles = Exposure miles x Est. No. trips.

§ Accident rate = accidents per 1000 vehicle miles (from State of Arizona Department of Transportation, 1982).

**Accident probability for hazardous waste transport (accidents per year) = accident rate x (travel miles/1000).

††From the Draft EIS (DEIS Table 4-8).

§§PCB population risk factor = accident probability x population of impact area.

Table D-2. Increase in population risk factor due to PCB shipments to the Western Harquahala Plain and Ranegras Plain sites

PCB Population Risk Factor	Hazardous Waste Population Risk Factor*	Total Population Risk Factor†	Percent Increase Due to PCB Shipments
773	18,615	19,388	4%

* From Table 4-8 in the Draft EIS (DEIS p. 4-25).

† This figure equals the PCB population risk factor plus the hazardous waste population risk factor.

Table D-3. Population risk factors for PCB transport to the Mobile site

Route*	Exposure Miles	Est. No. Trips	Travel Miles†	Accident Rate§	Accident Probability**	Population of Impact Area††	PCB Population Risk Factor§§
A	93	361	33,573	0.0004	0.013	133,030	1,729
B	107	361	38,627	0.0006	0.023	132,400	3,045
C	42	361	15,162	0.0003	0.005	104,410	522
D	105	272	28,560	0.0008	0.023	103,415	2,379

* Routes are as follows (from Draft EIS, p. 4-20):

A: Phoenix-Chandler-Arizola (I-10). Arizola-Casa Grande-Maricopa-Site (Maricopa Road).

B: Phoenix-Chandler-Exit 194 (I-10). Exit 194-Casa Grande-Stanfield (Hwy 84). Stanfield-Maricopa-Site (Maricopa Road).

C: Phoenix-Chandler (I-10). Chandler-Maricopa-Site (Maricopa Road).

D: This route covers the additional PCB traffic on I-10 and Buckeye Road between the Western Harquahala Plain/Ranegras Plain sites and Phoenix.

Tucson routes are not included, since no regular PCB shipments have been estimated for the Tucson area.

† Travel miles = Exposure miles x Est. No. trips.

§ Accident rate = accidents per 1000 vehicle miles (from State of Arizona Department of Transportation, 1982).

**Accident probability for hazardous waste transport (accidents per year) = accident rate x (travel miles/1000).

††From the Draft EIS (DEIS Table 4-6).

§§PCB population risk factor = accident probability x population of impact area.

Table D-4. Increase in population risk factors due to PCB shipments to the Mobile site

Route	Combined PCB Population Risk Factor*	Hazardous Waste Population Risk Factor†	Total Population Risk Factor**	Percent Increase Due to PCB Shipments
A	4,108	9,312	13,420	44%
B	5,424	17,212	22,636	32%
C	2,901	2,088	4,989	139%

* This figure includes the population risk factor for each access route from Phoenix (Routes A, B, and C) plus the population risk factor for PCB traffic on I-10 between the Western Harquahala Plain and Ranegras Plain sites and Phoenix (Route D).

† From Table 4-6 in the Draft EIS (DEIS p. 4-21).

**This figure equals the PCB population risk factor plus the hazardous waste population risk figure.

APPENDIX E

MODIFIED MERCALLI INTENSITY SCALE

The following pages explain the Modified Mercalli Intensity Scale used in Section IV to indicate the intensity of earthquakes affecting Yuma and Maricopa Counties. The explanation is reprinted from:

> Dubois, S. M., A. W. Smith, N. K. Nye, and T. A. Nowak, Jr. Arizona Earthquakes, 1776 - 1980. Bulletin 193, Arizona Bureau of Geology and Mineral Technology, Geological Survey Branch, and University of Arizona, Tucson, Arizona. [1982.]

B. MODIFIED MERCALLI INTENSITY SCALE OF 1931
(Unabridged)

[Adapted from Sieberg's Mercalli-Cancani scale, modified and condensed]

I. a. Not felt - or, except rarely under especially favorable circumstances.
Under certain conditions, at and outside the boundary of the area in which a great shock is felt:
b. Sometimes birds, animals, reported uneasy or disturbed.
c. Sometimes dizziness or nausea experienced.
d. Sometimes trees, structures, liquids, bodies of water, may sway, doors may swing, very slowly.

II. a. Felt indoors by few, especially on upper floors, or by sensitive, or nervous persons.
Also, as in grade I, but often more noticeably:
b. Sometimes hanging objects may swing, especially when delicately suspended.
c. Sometimes trees, structures, liquids, bodies of water, may sway, doors may swing, very slowly.
d. Sometimes birds, animals, reported uneasy or disturbed.
e. Sometimes dizziness or nausea experienced.

III. a. Felt indoors by several . . .
b. Motion usually rapid vibration.
c. Sometimes not recognized to be an earthquake at first.
d. Duration estimated in some cases.
e. Vibration like that due to passing of light, or lightly loaded trucks, or heavy trucks some distance away.
f. Hanging objects may swing slightly.
g. Movements may be appreciable on upper levels of tall structures.
h. Rocked standing motorcars slightly.

IV. a. Felt indoors by many, outdoors by few.
b. Awakened few, especially light sleepers.
c. Frightened no one, unless apprehensive from previous experience.
d. Vibration like that due to passing of heavy, or heavily loaded trucks.
e. Sensation like heavy body striking building, or falling of heavy objects inside.
f. Rattling of dishes, windows, doors; glassware and crockery clink and clash.
g. Creaking of walls, frame, especially in the upper range of this grade.
h. Hanging objects swung, in numerous instances.
i. Disturbed liquids in open vessels slightly.
j. Rocked standing motorcars noticeably.

V. a. Felt indoors by practically all, outdoors by many or most.
b. Outdoors direction estimated.
c. Awakened many, or most.
d. Frightened few--slight excitement, a few ran outdoors.
e. Buildings trembled throughout.
f. Broke dishes, glassware, to some extent.
g. Cracked windows--in some cases, but not generally.
h. Overturned vases, small or unstable objects, in many instances, with occasional fall.
i. Hanging objects, doors, swung generally or considerably.
j. Knocked pictures against walls, or swung them out of place.
k. Opened, or closed, doors, shutters, abruptly.
l. Pendulum clocks stopped, started, or ran fast, or slow.
m. Moved small objects, furnishings, the latter to slight extent.
n. Spilled liquids in small amounts from well-filled open containers.
o. Trees, bushes, shaken slightly.

VI. a. Felt by all, indoors and outdoors.
b. Frightened many, excitement general, some alarm, many ran outdoors.
c. Awakened all.
d. Persons made to move unsteadily.
e. Trees, bushes, shaken slightly to moderately.
f. Liquid set in strong motion.
g. Small bells rang--church, chapel, school, etc.
h. Damage slight in poorly built buildings.
i. Fall of plaster in small amount.
j. Cracked plaster somewhat, especially fine cracks (in) chimneys in some instances.
k. Broke dishes, glassware, in considerable quantity, also some windows.
l. Fall of knickknacks, books, pictures.
m. Overturned furniture in many instances.
n. Moved furnishings of moderately heavy kind.

VII. a. Frightened all--general alarm, all ran outdoors.
b. Some, or many, found it difficult to stand.
c. Noticed by persons driving motorcars.
d. Trees and bushes shaken moderately to strongly.
e. Waves on ponds, lakes, and running water.
f. Water turbid from mud stirred up.
g. Incaving to some extent of sand or gravel stream banks.
h. Rang large church bells, etc.
i. Suspended objects made to quiver.
j. Damage negligible in buildings of good design and construction.
k. (Damage) slight to moderate in well-built ordinary buildings, considerable in poorly built or badly designed buildings, adobe houses, old walls (especially where laid up without mortar, spires, etc.
l. Cracked chimneys to considerable extent, walls to some extent.

(Appendix V-B continued)

m. Fall of plaster in considerable to large amount, also some stucco.
n. Broke numerous windows, furniture to some extent.
o. Shook down loosened brickwork and tiles.
p. Broke weak chimneys at the roofline (sometimes damaging roofs).
q. Fall of cornices from towers and high buildings.
r. Dislodged bricks and stones.
s. Overturned heavy furniture, with damage from breaking.
t. Damage considerable to concrete irrigation ditches.

VIII. a. Fright general--alarm approaches panic.
b. Disturbed persons driving motorcars.
c. Trees shaken strongly--branches, trunks, broken off, especially palm trees.
d. Ejected sand and mud in small amounts.
e. Changes: temporary, permanent; in flow of springs and wells; dry wells renewed flow; in temperature of spring and well waters.
f. Damage slight in structures (brick) built especially to withstand earthquakes.
g. (Damage) considerable in ordinary substantial buildings, partial collapse; racked, tumbled down, wooden houses in some cases; threw out panel walls in frame structures, broke off decayed piling.
h. Fall of walls.
i. Cracked, broke, solid stone walls seriously. Wet ground to some extent, also ground on steep slopes.
j. Twisting, fall, of chimneys, columns, monuments, also factory stacks, towers.
k. Moved conspicuously, overturned, very heavy furniture.

IX. a. Panic general.
b. Cracked ground conspicuously.
c. Damage considerable in (masonry) structures built especially to withstand earthquakes.
d. Threw out of plumb some wood frame houses built especially to withstand earthquakes.
e. (Damage) great in substantial (masonry) buildings, some collapse in large part; or wholly shifted frame buildings off foundations, racked frames.
f. (Damage) serious to reservoirs.
g. Underground pipes sometimes broken.

X. a. Cracked ground, especially when loose and wet, up to widths of several inches; fissures up to a yard in width ran parallel to canal and stream banks.
b. Landslides considerable from river banks and steep coasts.
c. Shifted sand and mud horizontally on beaches and flat land.
d. Changed level of water in wells.

(Appendix V-B continued)

e. Threw water on banks of canals, lakes, rivers, etc.
f. Damage serious to dams, dikes, embankments.
g. (Damage) severe to well-built wooden structures and bridges, some destroyed.
h. Developed dangerous cracks in excellent brick walls.
i. Destroyed most masonry and frame structures, also their foundations.
j. Bent railroad rails slightly.
k. Tore apart, or crushed endwise, pipelines buried in earth.
l. Open cracks and broad wavy folds in cement pavements and asphalt road surfaces.

XI. a. Disturbances in ground many and widespread, varying with ground material.
b. Broad fissures, earth slumps, and land slips in soft, wet ground.
c. Ejected water in large amounts charged with sand and mud.
d. Caused sea-waves ("tidal" waves) of significant magnitude.
e. Damage severe to wood frame structures, especially near shock centers.
f. (Damage) great to dams, dikes, embankments, often for long distances.
g. Few, if any, (masonry) structures remained standing.
h. Destroyed large well-built bridges by the wrecking of supporting piers, or pillars.
i. Affected yielding wooden bridges less.
j. Bent railroad rails greatly, and thrust them endwise.
k. Put pipelines buried in earth completely out of service.

XII. a. Damage total--practically all works of construction damaged greatly or destroyed.
b. Disturbances in ground great and varied, numerous shearing cracks.
c. Landslides, falls of rock of significant character, slumping of river banks, etc., numerous and extensive.
d. Wrenched loose, tore off, large rock masses.
e. Fault slips in firm rock, with notable horizontal and vertical offset displacements.
f. Water channels, surface and underground, disturbed and modified greatly.
g. Dammed lakes, produced waterfalls, deflected rivers, etc.
h. Waves seen on ground surfaces (actually seen, probably, in some cases).
i. Distorted lines of sight and level.
j. Threw objects upward into the air.

Source: Brazee, R. J., 1978, Reevaluation of Modified Mercalli Intensity scale for earthquakes using distance as determinant: NOAA Technical Memorandum EDS NG-SDC-4, 65 p.

APPENDIX F

ADDITIONAL STUDIES NEEDED FOR THE ARIZONA HAZARDOUS WASTE FACILITY

Table F-1 suggests additional studies which would be needed to properly design, operate and/or close a hazardous waste facility at the proposed site near Mobile. The Table, prepared by ADHS, is not intended to be comprehensive nor does it represent the minimum that could be needed.

Table F-1. Additional studies needed for the Arizona Hazardous Waste Facility

Information Needed	Methods	Data Collected	Collector
Groundwater 1. Static water levels 2. Flow - aquifer characteristics 3. Water quality 4. Interconnected aquifers 5. Recharge areas 6. Aquifer responses	1. Monitoring wells production wells 2. Borings 3. Geophysical surveys 4. Computer modeling 5. Piezometers 6. Down hole logging	Transmissivities, storage coefficients, drawdown, hydraulic conductivity, yield, depth to water, water quality samples, chemical fluctuations, depth to bedrock, recharge zones, permeable zones, clay layers, perched zones, vertical conductivity	Contractor and ADHS (Advisor)
Subsidence/Faulting 1. Evidence 2. Magnitude 3. Location	1. Geophysical survey 2. Borings 3. Surface survey 4. Control points 5. Down hole logging	Depth to bedrock, location of fracture zones, existing subsidence zones, potential subsidence areas, magnitude of subsidence	Sub-Contractor in conjunction with ADHS and Contractor
Surface Water 1. Drainage patterns/area 2. Floodplains-overbank areas 3. Channel characteristics 4. Flows	1. Air photos 2. Channel surveys 3. Stream gages 4. Vegetation mapping 5. Computer modeling	Flows, channel changes, high water marks, thalweg slope, scour, overbank flow, water quality, diversion structure location, potential recharge zones, drainage patterns, head cutting, down cutting, basin slope	Contractor and ADHS
Soils 1. Surface distribution 2. Engineering uses (dikes, etc.) 3. Vadose zone - layers (clays) 4. Attenuative ability 5. Porosity/permeability 6. Infiltration capacity	1. Air photos 2. Soil survey 3. Lab tests 4. Borings/sampling 5. Infiltrometers 6. Vadose zone monitoring equipment	Grain size, plastic limit/liquid limit/engineering properties, soil distribution, infiltration rates, attenuation of specific wastes, porosity, vadose monitoring zones, spatial distribution, down hole profile, moisture content, caliche layers, texture, cation exchange capacity	Contractor and Sub-Contractor
Climate/Weather 1. Magnitude/duration and direction of wind 2. Evaporation 3. Precipitation	1. Evaporation pans, lysimeters 2. Precipitation gauges 3. Thermometers, psychrometers 4. Solar energy 5. Anemometers	Rainfall, windspeed, wind direction, wind duration, evaporation, solar energy, temperature	Contractor

APPENDIX G

PUBLIC NOTICE OF HEARINGS ON THE DRAFT EIS

The following pages show documents which were used to provide public notice of the public hearings on the Draft EIS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: March 14, 1983

SUBJECT: Public Notice of Draft EIS Meeting and Hearings

FROM: Chuck Flippo CF
EIS Project Officer (T-2-1)

TO: Files (SOW HAZ 5-3-1)

Notice of the availability of the Draft EIS, and of the public meeting and hearings to be held on the Draft EIS, was given through distribution of the four attached documents. They are:

1. A notice dated January 14, 1983, notifying concerned persons of the pending availability of the Draft EIS and the schedule of public meetings and hearings to be held on the document. This notice was mailed to over 1500 persons, including all persons on the mailing list compiled by ADHS's Bureau of Waste Control during the site selection process; all persons who participated in the EIS scoping process; and national organizations whose addresses were compiled by EPA Region 9.

2. Legal notices placed in the Phoenix Gazette and the Arizona Republic of January 14, 1983.

3. A notice of the public meeting and hearings, dated January 20, 1983, which was mailed with copies of the Draft EIS. These copies were initially distributed to approximately 200 agencies, Indian tribes, organizations, and individuals, most of whom had also been sent the January 14 notice.

4. A press release sent to newspapers in Arizona. The news release was sent to the major daily newspapers in Phoenix and Tucson as well as the Buckeye Valley News, the Casa Grande Dispatch, the Gila Bend Herald, the Gila Bend Sun, the Parker Pioneer, and the Yuma Daily Sun.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

14 JAN 1983

TO ALL CONCERNED PERSONS:

The Environmental Protection Agency (EPA), Region 9, has prepared an Environmental Impact Statement (EIS) on the proposed sale of federal land to the State of Arizona for the purpose of developing a hazardous waste management facility. The Arizona Department of Health Services (ADHS) proposes to purchase a 1-square mile parcel of land near the community of Mobile, Arizona, for the facility.

AVAILABILITY OF THE DEIS

The Draft Environmental Impact Statement (DEIS) has been prepared in compliance with Section 102(2)(c) of the National Environmental Policy Act. The DEIS will be available for distribution to the public and other government agencies on or about January 20, 1983. A summary of the DEIS will also be available upon request. Persons wishing to review the draft EIS or the summary should request a copy from:

U. S. Environmental Protection Agency
Region 9
ATTN: Chuck Flippo (T-2-1)
215 Fremont Street
San Francisco, CA 94105

You may also phone your request to EPA at (415) 974-8128 or ADHS in Phoenix at (602) 255-1162. A limited number of copies will also be available at a public meeting to be held in Mobile (see below).

Copies of the DEIS will be available for public review at EPA offices in San Francisco and Washington, D. C., as well as at depository libraries and government agencies in Arizona. A list of these libraries and agencies is attached.

PUBLIC MEETING

EPA, in cooperation with the U. S. Bureau of Land Management and ADHS, will hold a public meeting on Thursday, February 17, 1983, so that interested persons may meet with agency representatives to discuss the contents of the EIS and answer questions about the document. The purpose of the meeting is to present information rather than to receive formal comments on the DEIS. Two public hearings have been scheduled to receive oral and written public comments at a later date (see below).

The public meeting will be held in the Mobile Elementary School, 14 miles west of Maricopa on the Maricopa-Mobile Road, between 7:30 and 9:30 p. m. The meeting will be in an "open house" format. A short opening statement will be made to summarize the contents of the EIS. Afterwards, persons with specific concerns or questions will be able discuss them individually with agency representatives.

PUBLIC HEARINGS

Public hearings on the Draft EIS will be held on Tuesday, March 1, 1983, at these times and places:

9:30 a. m.	Arizona Department of Health Services Conference Rooms A and B, 4th Floor 1740 West Adams Street Phoenix, Arizona
7:30 p. m.	Buckeye Elementary School Cafeteria 210 South 6th Street Buckeye, Arizona

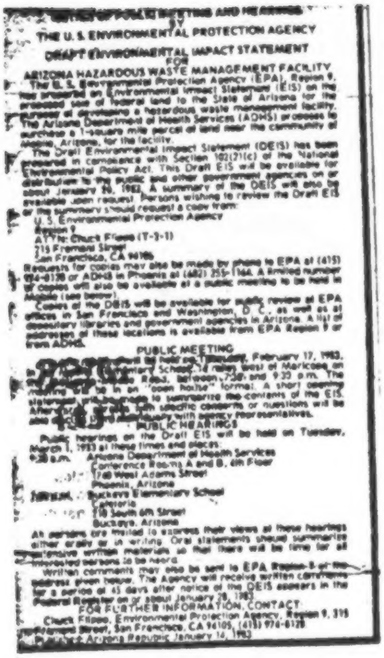
All persons are invited to express their views at these hearings either orally or in writing. Oral statements should summarize extensive written materials so that there will be time for all interested persons to be heard.

Written comments may also be sent to EPA Region 9 at the address given below. The Agency will receive written comments for a period of 45 days after notice of the DEIS appears in the Federal Register on or about January 28, 1983.

FOR FURTHER INFORMATION, CONTACT:

Chuck Flippo, Environmental Protection Agency, Region 9, 215 Fremont Street, San Francisco, CA 94105; (415) 974-8128 (Commercial); 454-8128 (FTS).

Attachment



NOTICE OF PUBLIC MEETING AND HEARINGS
BY
THE U.S. ENVIRONMENTAL PROTECTION AGENCY
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR
ARIZONA HAZARDOUS WASTE MANAGEMENT FACILITY

The U.S. Environmental Protection Agency (EPA), Region 9, has prepared an Environmental Impact Statement (EIS) on the proposed sale of federal land to the State of Arizona for the purpose of developing a hazardous waste management facility. The Arizona Department of Health Services (ADHS) proposes to purchase a 1-square mile parcel of land near the community of Mobile, Arizona, for the facility.

The Draft Environmental Impact Statement (DEIS) has been prepared in compliance with Section 102(2)(c) of the National Environmental Policy Act. This Draft EIS will be available for distribution to the public and other government agencies on or about January 28, 1983. A summary of the DEIS will also be available upon request. Persons wishing to review the Draft EIS or the summary should request a copy from:

U.S. Environmental Protection Agency
Region 9
ATTN: Chuck Flippo (T-3-1)
215 Fremont Street
San Francisco, CA 94105

Requests for copies may also be made by phone to EPA at (415) 974-8128 or ADHS in Phoenix at (602) 255-1164. A limited number of copies will also be available at a public meeting to be held in Mobile (see below).

Copies of the DEIS will be available for public review at EPA offices in San Francisco and Washington, D.C., as well as at depository libraries and government agencies in Arizona. A list of addresses of these locations is available from EPA Region 9 or from ADHS.

PUBLIC MEETING

[illegible] will be held on Thursday, February 17, 1983, in [illegible] School, [illegible] miles west of Maricopa on [illegible] Road, between 7:30 and 9:30 p.m. The meeting will be in an "open house" format. A short opening statement [illegible] to summarize the contents of the EIS. After [illegible] with specific concerns or questions will be able [illegible] directly with agency representatives.

PUBLIC HEARINGS

Public hearings on the Draft EIS will be held on Tuesday, March 1, 1983 at these times and places:

9:30 a.m. Arizona Department of Health Services
Conference Rooms A and B, 4th Floor
1740 West Adams Street
Phoenix, Arizona
[illegible] Buckeye Elementary School
Cafeteria
210 South 6th Street
Buckeye, Arizona

All persons are invited to express their views at these hearings either orally or in writing. Oral statements should summarize extensive written materials so that there will be time for all interested persons to be heard.

Written comments may also be sent to EPA Region 9 at the address given above. The Agency will receive written comments for a period of 45 days after notice of the DEIS appears in the Federal Register on or about January 28, 1983.

FOR FURTHER INFORMATION, CONTACT:

Chuck Flippo, Environmental Protection Agency, Region 9, 215 Fremont Street, San Francisco, CA 94105, (415) 974-8128

Published Arizona Republic January 14, 1983

AFFIDAVIT OF PUBLICATION

THE ARIZONA REPUBLIC | *The Phoenix Gazette*

STATE OF ARIZONA
COUNTY OF MARICOPA } ss.

JAMES W. EVANS, being first duly sworn upon oath deposes and says: That he is the agent of Phoenix Newspapers Inc., publishers of

The Arizona Republic
The Phoenix Gazette

a newspaper of general circulation in the County of Maricopa, State of Arizona, published at Phoenix, Arizona, and that the copy hereto attached is a true copy of the advertisement published in the said paper on the following dates

January 14, 1983

James W. Evans
Agent

Sworn to before me this

18th day of

January A. D. 1983

Mary J. Noratuef
Notary Public

My Commission Expires Jan. 25, 1984

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

20 JAN 1983

TO ALL INTERESTED AGENCIES, PUBLIC GROUPS, AND CONCERNED CITIZENS:

Attached for your review is the Draft Environmental Impact Statement (DEIS) for the proposed Arizona Hazardous Waste Management Facility. This DEIS, prepared in accordance with the National Environmental Policy Act of 1969, addresses the proposed sale of federal land by the U. S. Bureau of Land Management (BLM) to the State of Arizona for the purpose of siting a hazardous waste facility.

At BLM's request, the Environmental Protection Agency (EPA) assumed the role of lead agency in preparing the EIS. BLM and the Arizona Department of Health Services (ADHS) haved served as cooperating agencies.

Public hearings will be held on Tuesday, March 1, 1983, to receive testimony on this DEIS. The times and places are listed below. All interested persons are invited to express their views at these hearings.

9:00 a. m.
Arizona Department of Health Services
Conference Rooms A and B, 4th floor
1740 West Adams Street
Phoenix, Arizona

7:30 p. m.
Buckeye Elementary School Cafeteria
210 South 6th Street
Buckeye, Arizona

In addition, the public is invited to meet with representatives of EPA, BLM, and ADHS to discuss the EIS in an "open house" public meeting to be held between 7:30 and 9:30 p. m. on Thursday, February 17, 1983, at the Mobile Elementary School, in Mobile, Arizona, 14 miles west of Maricopa on the Maricopa-Mobile Road.

Public comments on the DEIS may be submitted for 45 days after notice of the DEIS appears in the Federal Register. All comments, questions, and requests for additional copies of the DEIS (available in limited supply) or of the Summary should be directed to:

U. S. Environmental Protection Agency, Region 9
ATTN: Chuck Flippo (T-2-1)
215 Fremont Street
San Francisco, CA 94105

phone: (415) 974-8128

Copies of this DEIS are also available for review at these agencies and libraries:

U. S. Environmental Protection Agency
Region 9
Library-Information Center
215 Fremont Street
San Francisco, CA 94105

U. S. Environmental Protection Agency
Public Reference Unit, Library
401 M Street SW, Room 2922
Washington, DC 20460

U. S. Bureau of Land Management
Phoenix District Office
2929 West Clarendon
Phoenix, AZ 85017

Arizona Department of Health Services
Library
1740 West Adams
Phoenix, AZ 85007

Arizona Department of Health Services, Northern Regional Office
2501 North Fourth Street
Flagstaff, AZ 86001

Arizona Department of Health Services, Southern Regional Office
403 West Congress
Tucson, AZ 85701

Arizona Department of Library, Archives, and Public Records
State Capitol Building
Phoenix, AZ 85007

Central Arizona Association of Governments
1810 Main Street
Florence, AZ 85232

District IV Council of Governments
1020 Fourth Avenue
Yuma, AZ 85364

Maricopa Association of Governments
111 South Third Avenue
Phoenix, AZ 85004

Northern Arizona Council of Governments
119 East Aspen Street
Flagstaff, AZ 86001

Pima Association of Governments
405 Trans-America Building
Tucson, AZ 85701

Southeastern Arizona Governments Organization
118 Arizona Street
Bisbee, AZ 85603

Clifton City-Greenlee County Library
Riverside Drive
Clifton, AZ 85533

Cochise County Library
6 Main Street
Bisbee, AZ 85603

Flagstaff City-Coconino County Library
11 West Cherry
Flagstaff, AZ 86001

Maricopa County Library
3375 West Durango
Phoenix, AZ 85009

Miami Memorial-Gila County Library
1052 Adonis Avenue
Miami, AZ 85539

Mohave County Library
219 North Fourth Street
Kingman, AZ 86401

Nogales City-Santa Cruz County Library
548 Grand Avenue
Nogales, AZ 85621

Pinal County Free Library
1301 Pinal
Florence, AZ 85232

Prescott Public-Yavapai County Library
215 East Goodwin Street
Prescott, AZ 86301

Roxanne Whipple Memorial-Navajo County Library
420 West Gilmore
Winslow, AZ 86047

Safford City-Graham County Library
808 Eighth Avenue
Safford, AZ 85546

St. Johns-Apache County Library
75 West Cleveland
St. Johns, AZ 85936

Tucson Public-Pima County Library System
200 South Sixth Avenue
Tucson, AZ 85729

Yuma City-County Library
350 Third Avenue
Yuma, AZ 85364

Arizona State University
Documents Service
Hayden Library
Tempe, AZ 85281

Northern Arizona University
Library
Flagstaff, AZ 86001

Health Sciences Center Library
University of Arizona
Tucson, AZ 85724

United States
Environmental Protection
Agency

Region 9
215 Fremont Street
San Francisco, CA 94105

Arizona
California
Nevada
Pacific Islands

FOR IMMEDIATE RELEASE
February 8, 1983

John J. Zemaitis
(415) 974-8083

PUBLIC MEETING SET FOR WASTE FACILITY ENVIRONMENTAL IMPACT STATEMENT

San Francisco, February 8 - The Environmental Protection Agency will hold a public meeting on its recently released Draft Environmental Impact Statement (DEIS) on the hazardous waste facility the State of Arizona proposes to develop near the community of Mobile, Arizona. The meeting will be held at the following place and time:

Thursday, February 17, 1983
7:30 - 9:30 P.M.
Mobile Elementary School
Maricopa-Gila Bend Road
Mobile, Arizona

The February 17 public meeting will be in an "open house" format. Persons attending the meeting will be able to meet individually with the EPA, Bureau of Land Management (BLM), and Arizona Department of Health Services (ADHS) officials to ask questions or discuss the contents of the document. This will enable members of the public to discuss their concerns informally with the agency staff members who are most familiar with those issues.

The Agency also plans to hold two public hearings to receive testimony concerning the DEIS. The hearings will be held at the following places and times:

Tuesday, March 1, 1983
9:30 A.M.
Conference Rooms A&B, 4th floor
Arizona Department of Health Services
1740 West Adams
Phoenix, Arizona

- more -

Tuesday, March 1, 1983
7:30 P.M.
Buckeye Elementary School Cafeteria
210 South Sixth Street
Buckeye, Arizona

The public hearings will be held to receive prepared written or oral comments on the DEIS. Persons may also mail their comments to EPA's San Francisco Regional Office.

The DEIS describes the potential impacts of locating the proposed hazardous waste facility at the Mobile Site in lower Rainbow Valley. The site is some 65 road miles southwest of Phoenix in Maricopa County. The DEIS also describes the impacts of locating the facility in two alternative sites, both of which are located in the new County of La Paz. One of the alternative sites is in the Western Harquahala Plain, approximately 90 miles west of Phoenix, while the other is in the Ranegras Plain, some 100 miles west of Phoenix.

The three sites were recommended as suitable hazardous waste sites in a report submitted by the Arizona Department of Health Services to the State Legislature in January 1981. After receiving the Report, the Legislature selected the Mobile site as the future location of the facility. The facility would be built and operated by a private firm under contract to ADHS.

The DEIS was prepared because the State has asked to purchase the land from the federal Bureau of Land Management. Under federal law, an environmental impact statement must be prepared whenever a major federal action, such as the sale of federal land for the siting of a hazardous waste facility, would significantly affect the quality of the human environment. BLM asked EPA to prepare the EIS because of the EPA's greater expertise in the field of hazardous waste management.

Both the public meeting and the hearings are open to all interested members of the public. For further information contact:

Chuck Flippo
Environmental Protection Agency
215 Fremont Street
San Francisco, CA 94105
(415) 974-8128

Information is also available from ADHS' Bureau of Waste Control in Phoenix at (602) 255-1162.

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BUCKEYE VALLEY NEWS
VOLUME 59, NUMBER 8
BUCKEYE, ARIZONA 85326
FEBRUARY 24, 1983
TWENTY-FIVE CENTS

Proposed Hazardous Dump Meeting Tuesday Night

Tuesday evening you will have an opportunity to convey your feelings regarding the proposed hazardous waste management facility (dump) which is planned to be built near Mobile at the far south end of Rainbow Valley.

A public hearing will be held at the Buckeye Elementary School cafeteria at 7:30 p.m. Tuesday night. Since the land is now under the jurisdiction of the federal government and must be sold to the state before a dump can be realized, the hearing has been called in order to allow you the opportunity of commenting on the proposed sale of the federal land.

The Draft Environmental Impact Statement (DEIS) has been prepared and will be the primary topic of conversation. Everyone attending is free to comment on any aspect of the facility.

Involved in the procedure are the EPA, BLM, and ADHS—the ADHS is Arizona Department of Health Services. No doubt you are well acquainted with the other initials.

Prospective features of the proposed dump include surface ponds, storage tank and distillation unit, landfarm and secure landfill. The ponds would take care of acids and alkalis which would be neutralized and evaporated and would also handle wastewaters with heavy metals. Cyanide solutions would likewise be destroyed in a pond through treatments and allowed to evaporate.

Various solvents would be contained in the storage tank where organic solvents would be recovered by distillation. Various biodegradable organics would be taken care of at the landfarm with the wastes degraded by soil microorganisms.

Metal sludges, cyanide solids, pesticides, reactive wastes, ignitable wastes, halogenated organics and miscellaneous inorganics and asbestos would be taken care of in the secure landfill where the material would be buried in "cells specifically constructed to avoid hazards to workers and the environment – all wastes will be treated prior to landfilling by stabilization, fixation, solidification, etc."

There has been some concern by Rainbow Valley residents and others that somehow various hazardous wastes would be carried by either air or water into populated areas. Mobile is about 30 miles directly southeast of Buckeye.

It is expected that a number of people will attend the hearing here.

Hearings of this nature are required by law. Similar past hearings conducted for various purposes hereabouts have meant little or nothing as far as local comments have been concerned.

page 1

GPO 690-875/274